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Original Communications.

My Dear Doctor :—Allow your old friend to trouble you again with some thoughts on diseases of the Army. In my former communication I dealt mostly in excerpta. What was said related to a variety of diseases. I propose now, however, to dwell on a single disease for a while, for the purpose of fixing the mind upon it just now as being very likely to give our forces in the field during winter no little trouble. The disease to which I allude is

Scurvy.

It would be impossible to estimate too highly the duties of the surgeon with reference to the development of this disease among the soldiers. The causes which produce it should be made the subject of close, careful thought. Everything, indeed, favoring its production, should by the military commanders receive the most careful attention.

It may seem out of place in a popular communication like this to say anything on the history of scurvy. Still it is profitable to see, when not too inconvenient, what the Fathers have said and done. I am far from encouraging an undue veneration for those who have preceded us, and farther still from passing them by carelessly. Diseases, like words, have an etymology. Knowledge don't all come at once; no one generation is blessed with more

than a very small quantity. For the last two thousand years the Good Man has allowed just a little in the way of drippings from His sanctuary to those generations and to those alone that have been patient and industrious. Before the times of Hippocrates He commenced his favors to the medical profession; but it was to this distinguished personage and his cotemporaries that the richest treasures were vouchsafed. Hippocrates was the Abraham of the profession. He was patient and faithful. His faithfulness as a servant of Nature excites the admiration of all. Like the good old Arabian patriarch, he gave character to his age, while his works marked the commencement of a new dispensation, a dispensation characterized by sound thinking. "Pshaw! Hippocrates knew but little if anything accurately," say some, "and his works are not worth the labor of perusing." Such talk we often hear, but it comes from those indisposed to application. Hippocrates was a rich gift to his age. Medicine was in chaos at his advent into the world. Possessed of uncommon powers and singular devotion, he reduced things to order. In him was united the intellectual and moral traits that accomplish great results. He looked carefully to Nature as the stand-point from which to regard disease. He was not carried away with theories or sophisms. Much of what he taught is as true to-day as when uttered. Indeed, he taught truths which are eternal—need no revision.

But now I have been betrayed into a notice of Hippocrates, a very pleasant exercise, and I have always thought a profitable one. Looking through the past, especially in connection with such a character as the sage of Cos, gives breadth and strength to the mind.

The disease before us, *Scurvy*, it is said was described by Hippocrates by another name, "*eileos haimatodes.*" As far as I can see, however, from the description, I think it does not relate to scurvy. The fœtid breath, lax gums, hemorrhage, and ulcers on the legs, noticed by authors in the writings of Hippocrates as alluding to scurvy, might apply to other diseases as well. I am of the opinion that Hippocrates saw nothing in the way of scurvy.

The climate of Greece and the absence of long voyages by land or by sea in his day, were circumstances not favoring the development of modern scurvy or kindred complaints. Nor is it likely that the succeeding Greek and Roman authors knew anything of the disease, for they have described nothing that compares well with it. It is also true that the Arabian writers have left no descriptions that come nearer to scurvy than the "*spleen malady*" noticed by *Avicenna*.

The first description of a true *scurvy* is that pertaining to the Christian Army in Egypt about the year 1260, under Louis IX. Here we have not only the fœtid breath, spongy gums, debility of the general system, but alluded to distinctly are the *spots* on the legs. Soon after this, from the great improvements in navigation, and the discovery of the East Indies, which gave rise to long voyages, seamen were more frequently affected with scurvy. *Vasco de Gama* made a voyage in 1497 to the *East Indies*, by the Cape of Good Hope; about one hundred of his men, out of a hundred and sixty, died with the malady. During the second voyage of James Cartier to Newfoundland in 1535, the pestilence made its appearance and spread so rapidly and fatally that out of one hundred and ten only about ten escaped. It was here that the first hint was obtained with reference to the cure of the disease. The captain of the vessel learned from a patient that had been severely afflicted, and had recovered, that the cure was due to the juice of a certain tree called the "*banneda*" or "*ameda*."

We might pursue the chronology of this disease still further; but we will close up this branch by remarking that a catalogue of medical authors who have written books and treatises on scurvy is given by Lind. Some sixty are enumerated as having written from 1534 to 1755, a period of two hundred and twenty years. The list commences with the name of *Cordus*, and concludes with that of Charles Bisset, surgeon of Clearland, Yorkshire. It embraces such names as Cordus, Junius, Bruceus, Forestus, Horstius, Marteni, Sennertus, Schmid, Hildanus, Hartmannus, Riverius,

Willis, Silvius, Harvey, Sydenham, Poupart, Boerhaave, Pitcairn, Gmelin, Mead, Haxham, Pringle, Van Sweiten.

The colebrated work of Lind made its appearance about the middle of the last century, and is, therefore, now about one hundred years old. This work so completely exhausted the whole subject that it is still considered of high authority. With modern works we will have more to do in another connection.

The Latin authors denominated the disease *scorbutis*, which is said to be derived from *scorbect*, of the Danish language, or *scorbeck*, of the Dutch. The word *scorbo*, of Saxon origin, signifying a griping or tearing of the belly, is looked upon by some scholars as alluding to scurvy. Krantz is said to have been the first author who called the malady scurvy. He wrote about the year 1501.

The attempt was made very early to describe the malady. The description of Wierus seemed so accurate as to satisfy the public mind for a long time. The disease in his day (1567) was confined mostly to the inhabitants of the North seas. He had never met with it in France, Spain, or Italy. Echthius describes scurvy very well. Previously to his time the notion had become current that scurvy involved in some way or other the spleen, *Echthius* proposed the question, whether the blood might not be the principal thing diseased. The symptoms he enumerated as peculiar are, a fetid breath, spongy gums and apt to bleed, with loosening of the teeth, an eruption of livid purple spots, dark-colored maculæ on the face and legs. This author assigned as the cause of the disease, gross unwholesome food of salt-dried or putrid flesh or fish. *Longius* ascribed the frequency of scurvy in Holland to diet and air—principally to eating great quantities of water-fowl, and flesh salted and dried. The weather he thought had a great influence in causing the disease, such as moist air and southerly winds According to his observation, the trouble was most common in winter and spring. He treated the complaint with wormwood and wine. Dodonœus regarded scurvy as occasioned by bad diet. It was occasioned, according to this author, by the use of corrupted

rye. He gives instances of its production also by confinement in prison. The cases falling under his observation were treated by the use of vegetables. Patients with symptoms of plethora were bled. Brucœus found the disease to be endemic, in particular countries, from the air, water, and food. In such localities, scorbutic mothers were found to bear scorbutic children. Albertus was of the opinion that the disease may be hereditary and contagious. His views as regards symptoms were very good; and he made valuable contributions to treatment considering the period (1593) of his labors. He recommended the juices of acid fruits, *especially of oranges*, to be sprinkled on meats. These acids were likewise ordered to be put in soups; vinegar and water were directed to be taken freely. The medical treatment of this author was not as advanced as his views on diet. *The Faculty of Physic at Copenhagen*, in 1645, published a paper on the malady for the benefit of the poor. This paper has some most excellent points in it. The paper is divided into four sections. The first recites the cause of the disease, which is considered to be *bad air* and bad food; the second considers the means of prevention, which are hygienic and dietetic; the third and fourth embrace the indications of cure, and the treatment, by the use of vegetable acids, wholesome food, etc.

I have referred to these authors to notice the movements of the medical mind with reference to pathology and cure. The reader will have seen that some things very essential were appreciated a good while ago. Indeed, although the notions were by no means uniform, yet several authors seemed to linger as nearly to the truth as they could well do not to get into full possession of it. As regards treatment, some of the authors enumerated, knew almost as much as is known at the present day. I therefore feel myself benefited, and I hope your readers will also, by the little rummaging jaunt taken among the Fathers.

I now come to notice another author a little more in detail—I allude to *Lind*. This author wrote, as before remarked, about a century ago. He enjoyed the advantage of the labors of his prede-

cessors, and he availed himself of them very freely. Besides, he had the fortune to have a very rich experience of his own. He discussed very fully the alleged causes of the malady. He noticed the opinions freely also of his predecessors on this branch. The use of too much salt (chloride of sodium) the ancients pretty uniformly regarded as the cause. Lind controverted this opinion. He cited numerous facts falling under his observation, and he also made some experiments, all of which he thought controvert the common opinion. Nor was he more favorable to the view, that the malady is occasioned by bad, spoiled, or putrid diet. While he regarded salted provisions as predisposing, he was impressed most with the agency of bad air, *moist air*, and especially with *cold moist air*. The treatment recommended by Lind is very judicious. He spoke highly of milk, the whey part mixed with vegetable juices. Among the vegetables, he enumerated oranges, cabbage, water-cresses, horse radish. Mineral acids were used as a local application to the gums, when swelled or ulcerated.

Those who are desirous of consulting old authors still further, may get the works of *Rouppe, McBride, Milman*, and *Trotter*.

Among the authors, comparatively, of modern times is *Cullen*. So systematic on every subjest that occupied his attention, Cullen has some very good suggestions on Scurvy. Regarding the use of salted provisions as the principal cause, he nevertheless dwells at length on the effects of bad air, inattention to clothing, want of exercise, sameness of diet, etc. His remedies are hygienic and dietetic, together with tonics and strengthening drugs. He, and also his commentator, the late Prof. C. Caldwell, thought the disease perfectly preventable, and when found in the navy or army, it argues gross carelessness. We will see more of this suggestion in another connection.

In our own country and in Europe *scurvy* has made its appearance within the last ten or fifteen years, with about the same uniformity that it did in ancient times. During the war with Mexico, the troops were more or less affected. It also followed

the soldiers during their service in New Mexico; and the inhabitants of Kansas Territory suffered in the first settlement.

The Crimean campaign was attended with scurvy almost from the commencement. The English and French troops both were severely affected, and, if we are to believe Baudens and McLeod, no small share of the terrible mortality of that campaign was due especially to this malady.

I have now perhaps tried your patience, my dear Doctor, by dwelling so long on what is called the history of the disease. Excuse me, if you please, for old men are always entitled to full license in the way of prolixity.

A description of scurvy would seem to be now in order. I scarcely know how to begin it. The more classical of the authors divide the disease into some three stages. This is the method of Larrey, Napoleon's beloved surgeon. I shall not indulge in any such formality. The primary symptoms are not sufficiently characteristic to be readily distinguishable. They are, indeed, such as are common to quite a number of other diseases. Then, again, the symptoms are very far from being uniform. The descriptions of the ancients as well as moderns show this. In many instances the disease was not what it is at the present day, or the accounts are partial and imperfect. It is also often masked and complicated, so as to be difficult of appreciation. Hence, now, if I were asked for a pathognomonic sign of the complaint, I should be puzzled to give one. But it must not be inferred that it is without characters—that it has, to use a figure, no expression of countenance. The pathologist will ferret out its existence partly by what he can see, and partly, paradoxical as it may strike you, by what he don't see.

Those who wish a truthful and graphic statement of symptoms, given at length, should consult the works of Larrey. I have allowed myself only space enough for the more prominent. After the feelings of debility, enervation, and indisposition to mental or physical exertion that usher in the complaint, the surgeon will notice an alteration in the blood, by the tendency of slight wounds

to bleed profusely, and by the tendency also to hemorrhage from the gums and other portions of the mouth. The skin on different parts of the body, and especially on the legs, announces in an equally positive manner the presence of serious sanguinolent lesions; spots make their appearance, of a livid hue, they being caused by hemorrhage beneath the epidermis. In connection with such signs, there are discolorations on various portions of the body, and tendencies to swelling and stiffness of joints. Should the disease supervene during the presence of wounds, gunshot or of other kinds, these quickly change their character, becoming less disposed to healthy suppuration, and not showing any tendency to granulation; the lips of the wound take on the unnatural appearances of the skin, bleed profusely, and discharge an offensive sanguinolent fluid. Cicatrices, that, you know, possess less vitality than other parts, assume often a very peculiar appearance; they ulcerate, and in many instances show a tendency to mortification. Bones that have but lately united, upon the access of scurvy take on disease of the callus, and fall apart. As might be expected with such evidences of disordered blood, troubles innumerable, but secondary, must follow. The livid spots degenerate into black ones, or sloughing sores; the abdomen and joints tumefy; congestions take place, and fever, or rather an irritable circulation, sets in, that continues indefinitely.

From what I have alluded to as characterizing scurvy, is it not very plain, now, my dear Doctor, that the blood is pointed to very emphatically as the seat of the trouble; and that the attention of pathologists should be concentrated on the alteration of this fluid, if we are to have a solution of the question of proximate cause? But what is equally important just here, is that changes in the blood should also be regarded as the stand-point from which to regard the innumerable and terrible lesions, moral, intellectual, and physical, that appear during the progress of this disease.

It is not, of course, to be expected that the crucible of the chemist will reveal to us the exact character of the changes made on the blood in this complaint. Still, it is interesting to see what

light a mere chemical analysis sheds on the subject. I know of the labors of no one in this line in whom I have more confidence than in those of Busk. This author shows, by some three analyses of the blood of well-marked cases of scurvy that occurred in the Dreadnought Hospital Ship, that—1. The water is increased, a greater proportion of water in scorbutic than in normal blood; 2. The *fibrin* is augmented to double or treble the normal amount; 3. The *albumen* is increased—but slightly, however. The *solid constituents* are diminished. This is true of the corpuscles in an eminent degree; hence the colorless appearance of scorbutic blood.

The blood, then, being the seat of the lesions, suppose we turn our attention for a moment to the *remote* cause. This is a very fertile topic; perhaps, too, the most interesting connected with the disease. What is it that produces such a miserable condition of the human body, by first invading the blood, and afterwards extending its conquests to every fibre and cell of the organism? I have referred to the history of the malady for the purpose of seeing what the Fathers thought in regard to the remote cause. They suspected and dwelt on quite a number of things; but, as experience increased, their views settled down on exposure to *moist cold air*, the use of *salted meats*, *sameness of diet*, deprivation of vegetable food, etc. Authors of modern times have added but little to the above, but they have refined and criticised somewhat. Really, facts are plenty to show that neither one of these alleged causes, in itself, produces scurvy. Exposure to cold and wet will produce almost any thing in the way of disease perhaps with as much readiness as scurvy. Salted provisions, continued for a great length of time, do, without doubt, deteriorate. Still, scurvy has been known to occur when no salted provisions had been used, and, on the contrary, where the inhabitants use largely of vegetable food. The latter applies to the Turks, who often suffer extensively from scorbutic affections, although they scarcely eat any meat.

Now, my dear Doctor, I am inclined to think that more will be

elicited by invoking *the want of variety in diet* than in any thing else, or in all things else combined.

Let us look at this a little. We have some experiments bearing on the subject. Magendie's are to the point. He found that dogs and other inferior animals required *variety* of diet. Articles, however rich in a single one of the elements of diet, failed to sustain life. Sugar, starch, gelatine, or fat, did not keep the organism in a healthy condition unless combined with something else. Fed on either article exclusively, dogs soon died of inanition. Stark made experiments on his own digestive powers, with various simple substances, used exclusively. He found no one article capable of sustaining life. This noble physician made a martyr of himself to such experiments. He carried them on himself so far that he never recovered from the effects thereof. Magendie found that dogs fed on pure wheaten bread lived only fifty days. Rabbits or Guinea-pigs fed exclusively on oats, wheat, barley, cabbage, or carrots, die in a fortnight, and at times earlier. An ass fed on rice lived only fifteen days. Dogs fed exclusively on cheese or hard-boiled eggs lived a considerable time, but became feeble and lean, losing their hair. Bousingault fed a duck on butter. The duck received from 1,350 to 1,500 grains daily of butter. At the end of three weeks it indicated inanition. The butter oozed from every part of the body. The feathers became greasy, and emitted a fatty odor. Lehman made some experiments on himself, for the purpose of seeing the effects of certain articles of diet on the urine. One of them consisted in confining himself exclusively to non-nitrogenous substances, such as starch, sugar, gum, and oil. He was only able to continue the experiment for two, or at most three days, on account of the disturbance of health which supervened. Prof. William Hammond lived for ten days on boiled starch. After the third day the health suffered, and by the tenth the symptoms were debility, headache, pyrosis, and palpitation of the heart. The most conclusive experiments on the subject under consideration were those made by the *French "Gelaline" Commission.* It was found in these experiments that

animals fed on *gelatine*, or even on pure *fibrin* and *albumen*, after a short time became enfeebled, refused to take food, and finally died of inanition.

From such facts, and we might increase them, it is obvious that *variety of diet* is, in the present state of our knowledge, the nearest approach to the truth.

The acceptation of this great fact with reference to the *Nutritive Process*, will likely assist us in getting at the cause of scurvy. The body composed, as it is, of fifteen simple chemical elements, and some eighty-four organic, requires for its nourishment food that will supply these. Or, in other words, in order that good blood be formed for the growth and support of the tissues, the food must contain all the elements of good blood. If, then, the circumstances under which scurvy originates are investigated, they will be found to involve a violation of the aphorism at which we have arrived relative to the formation of good blood.

Prevention of scurvy. Having arrived at what seems to me, without doubt, the cause of scurvy, this looks like the proper place to edge in a word or two on the means of prevention. It has been said, the occurrence of scurvy in the Army is evidence of neglect of duty on the part of officers—that the disease is perfectly preventable, etc., etc. These are sweeping declarations, and although made with great apparent confidence, are but partially true. They would be true if officers, or those having charge of bodies of men could always control their diet—were always able to obtain such articles as preserve health. This, owing to causes in variety, officers cannot always do; and, as a consequence, scurvy will always come in for a share of the mortality of Armies and Navies. But it is not to be concealed that scurvy has appeared too frequently in modern times to be compatable with a timely and judicious regard of soldiers. The French and English suffered terribly in the Crimean war. We suffered in the Mexican war, and our troops now in the field have by no means been exempt from the terrible scourge. As long as food can be supplied of proper quantity and quality, the disease does not make its appearance. Here, then, is the secret of prevention.

It might not be out of place here to review slightly the composition of certain articles regarded as staple in the way of dietetics. As might be supposed the *albuminoid* substances are those of primary importance because they become fixed in the body as parts and parcels of the tissues, and as a consequence exhaustion when they are withheld takes place most rapidly. Starch, sugar, and the oils although not so common as the albuminous matters in the tissues—it being only in the brain and nervous matter that the fats are found in intimate connection with the tissues, and the sugars not being traced further than the blood—are, nevertheless, indispensable as part of the food.

The following is the composition of Wheat flour:

Gluten	10.2
Starch	72.8
Sugar	4.2
Gum	2.8
Water	10.0
	100.00

Composition of Oat meal:

Starch	59.00
Bitter matter and sugar	8.25
Gray albuminous matter	4.30
Fatty oil	2.00
Gum	2.50
Husk mixture and loss	23.95
	100.00

Composition of Eggs:

	White of Egg.	Yolk of Egg.
Water	80.00	53.78
Albumen and mucus	15.28	12.75
Yellow oil		28.75
Salts	4.72	4.72
	100.00	100.00

Composition of ordinary Butchers' meat:

Meat devoid of fat, 85.7	Water	68.418
	Solid matter	22.282
Fat cellular tissue, etc		14.300
		100.000

From the above, taken from Dalton's Physiology, the nutritious character of the articles in common use as food is obvious, because embracing the elements necessary to the making of good blood.

The quality of food determined, the next point of interest is the quantity. Below will be found a very good calculation, taken from Dalton also, for a man in full health and taking exercise in the open air.

Meat,	16	ounces, or	1.00	lb. Avourdupois.
Bread,	19	"	1.19	"
Butter or fat,	3½	"	0.22	"
Water,	52	"	3.38	"

"That is to say, rather less than two and a half pounds of solid food, and rather over three pints of liquid food."

In this connection, it should also be borne in mind that soldiers in the field may suffer notwithstanding they may have food in abundance. The suffering may arise from several causes, such as carelessness in preserving the food; or bad cooking. Soldiers will not eat sour bread, or putrid meat, or spoiled vegetables; at any rate not in quantities that preserve the status of health. Then, again, Army regulations require the soldiers to cook their own food. Cooking is an art that but few in this country, who offer themselves as soldiers, know any thing about. The process is indispensable for the disintegration and solution of crude vegetables, and unless well performed the more valuable of this class of articles, such as beans and potatoes, are not only unpalatable, but, in a great measure, indigestible. Animal food is insipid in the raw state, and although cooking does not increase its digestibility, it, nevertheless, commends it more favorably to the taste, and thus a flow of the digestive fluids is stimulated.

Scurvy is often complicated with other diseases. In army life it is often associated with diarrhœa, dysentery, camp fever. That it may frequently have the relation of cause to these diseases is not at all improbable. At any rate, the presence of scurvy implies an absence of the ordinary powers of vital resistance to disease of any kind.

Of *Medical* treatment but little can be said. I know of no drugs

except those merely of a sustaining character, that are of service. When the disease first announces itself the diet should be looked to at once, and the proper articles for the making of good blood supplied. Spongy gums or hemorrhage from the gums, may be treated with the tinct. of sesquichloride of iron, tannin, or dilute solution of per-sulphate of iron.

Very Respectfully,

HARMODEUS.

October 10th, 1862.

American and Foreign Intelligence.

[This Essay, prepared for Army Surgeons, we insert in order to give it general circulation. It is from the pen of Prof. Valentine Mott.—EDITOR.]

Essay on Anæsthetics.

Among the many improvements which characterize modern surgery, one of the most invaluable is the introduction of Anæsthetics. That we should be enabled safely and conveniently to place the human system in such a state, that the most painful operations may be performed without consciousness, is to have secured to man immunity from what he most dreads; for most men fear pain even more than death. When seeking death by suicide, the instinctive aversion to pain is apt to govern in the choice of means, and the person generally selects the method which he imagines will inflict upon him the least suffering.

Pain humbles the proudest and subdues the strongest. It was the great agent of the Spanish Inquisition, because it was more effective to extort confession than death itself. It was pain that made Cæsar weep, and I have seen the most heroic and stout-hearted men shed tears like a child, when enduring the anguish of neuralgia. As in a powerful engine when the director turns some little key, and the monster is at once aroused, and plunges along the pathway, screaming and breathing forth flames in the majesty of his power, so the hero of a hundred battles, if perchance a filament of nerve is compressed, is seized with spasms, and struggles

to escape the unendurable agony. We have then this the first reason for the use of anæsthetics.

To prevent pain is humane. No gentleman, not to say Christian, would needlessly inflict pain on any creature. It was, indeed, a certain kind of humanity which led the Athenians to execute Socrates by means of a narcotic draught, and which also made the Romans give their malefactors, during crucifixion, drugged wine. Even the guillotine had its conception in a kind of humane sentiment. Only savages inflict upon their victims the horrors of torture. And I do not believe that there is a surgeon of the nineteenth century who would willingly inflict any unnecessary pain in his operations if once practically acquainted with the means of prevention, and once confident and facile in their use.

But, secondly: *Pain is useless to the pained.* So Galen said centuries ago, and so the late discussions of the question of anæsthesia have abundantly proved; and if any members of the medical profession still entertain the idea that pain may have some occult, mysterious use, with which it would be dangerous to dispense, we must remember that the general sentiment of our profession, together with the common sense of mankind, is now unquestionably far in the advance.

The torment of toothache and the griping of colic confer no benefit on the sufferers; and all experience proves that the step proper to be taken first in the cure of these diseases is to relieve the pain.

When the pain produced by a surgical operation, or any other injury, is excessive, the exhaustion is greater, reaction comes on more slowly, the subsequent process of restoration is delayed, and the tendency to depression is increased. The practice of applying irritating applications and stimulating plasters to phlegmons has long been confined to the ignorant—the educated surgeon preferring soothing poultices and sedative lotions. But this reason may be made stronger; since

Pain is positively injurious to the pained. If sufficiently acute and long-continued, it will of itself produce death. The collapse which follows severe injuries, where there is little loss of blood, is to be attributed entirely to pain. When death occurs in such cases without reaction, it is the direct effect of pain.

Ambrose Parè, the father of modern surgery, in speaking of pain, says, "nothing so much dejects the powers of the patient." Gooch says, "mere pain can destroy the powers of life." My friend, Mr. Travers, observes, "pain, when amounting to a certain degree of intensity and duration, is of itself destructive." And I myself, like every other surgeon in active practice, am continually witnessing injuries where death results solely from the nervous shock.

In corroboration of this fact, we may notice, *en passant*, the Statistics of Amputations, collected by Professor Simpson, of Edinburgh. It is not necessary to quote them at length, but they come, by numeric process, to this conclusion—that in all serious surgical

operations the prevention of pain, by the use of anæsthetics, gives to the patient not only present relief, but also a better prospect of subsequent recovery—the mortality in such cases being clearly lessened by the use of anæsthetics. We see, then, that pain has the effect, primarily and directly, to depress the powers of life.

If we inquire into the cause of this, we shall find it in the physiological law, that *the nervous system controls the vascular*, and the collapse which attends severe injuries has its origin in the nervous system. Collapse is a provision for defending the nervous centers from an intolerable assault, and in this way does nature herself in a manner dictate the use of anæsthetics. It was probably in supposed obedience to this indication that John Hunter, great and ingenious even in his errors, advocated amputation before reaction had occurred. He meant to avoid the nervous shock.

In collapse the return of nervous energy precedes the restoration of the circulation; and, admitting all that is claimed for the chemical origin of the forces which produce the circulation of the blood, we must still allow that the current is controlled and directed by nervous influence. The most severe operation during anæsthesia produces little or no effect upon the pulse, because the nervous centers receive little or no impression.

Whatever, then, may be the physiological necessity for pain, though its uses in the animal economy may be to prevent lesion and deter from danger, we are here to view the question merely in a therapeutic light, and to conclude that pain is only evil, and that continually. And now, how shall it be prevented? Obviously by any means which will produce a less injurious effect. We are not required to possess an absolutely innocuous agent; if the injurious effect of the means used be less than that of the pain prevented, we are justified in employing them.

If we examine these doctrines carefully, we shall find that they are in fact not essentially new. The principles on which they are founded have been long recognized *in the use of narcotics*. I was in the habit of giving opiates freely before the introduction of anæsthetics, both before and after operations; and now, after over fifty years of experience, I still retain them in my confidence, for their power to relieve pain after operations, thus improving the condition of the patient, and favorably modifying the subsequent inflammation. In the treatment of certain painful affections, such as puerperal fever or peritonitis, opium is well known not only to be palliative, but directly curative. Richter called it "the grand antiphlogistic remedy."

It has always been used more freely by surgeons in this country than in Europe, and to this cause I attribute, in great measure, our lesser subsequent mortality. And opium and its preparations are the only anodynes well adapted to surgical use. No substitutes are worthy of confidence.

When chloroform or æther is to be used, it is not advisable to give an opiate previous to the operation, as to do so would increase the tendency to subsequent vomiting, which every experienced

surgeon is anxious to avoid. When the system is laboring under the shock of any newly-received and severe injury, the powers of life are in abeyance, and the act of retching tends to an unfortunate issue. In collapse, if the patient vomit, he is apt to die.

In cases of hare lip, however, and in operations about the mouth and jaws and nose, we are frequently compelled to depend, as formerly, upon narcotics for preventing or mitigating the pain, as the locality renders inhalation impracticable.

After operations, opiates are to be used, without much reference to quantity, in proportion to the severity of the pain. The only injurious effect of their too free exhibition would be after some hours a little irritability of the stomach. Their constipating tendency in such cases is of no therapeutic importance, and would in no degree increase the subsequent local inflammation.

Alcoholic stimulants are also well known to exercise a limited anæsthetic power. Men in a condition of complete intoxication are sometimes unconscious of the injuries they receive, and formerly some surgeons were in the habit of benumbing the sensibility of the patient, and sometimes I fear their own, by copious draughts of spirituous liquors. But this practice can, at best, produce but very imperfect anæsthesia, and intoxicating drinks are than opium still more apt to disturb the stomach. I well remember a case of amputation of the thigh which occurred a few years since in my own practice, where the attending physician, notwithstanding repeated cautions, administered brandy to the patient so freely as to induce vomiting, thus interfering with the continuance of the reaction, and inducing a fatal result. It was an extensive cannon shot of the knee joint, and on the third day from the injury, before the collapse had sufficiently passed off.

But opium and alcohol have been referred to, rather as illustrations of the truth of the principles of anæsthesia than as practical anæsthetic agents. To produce any considerable insensibility with them would require their use in quantities and for a length of time that could not fail to be seriously injurious to the nervous system. Days would be required to recover from their narcotic effect. Hence it is, that such agents are of little account when compared with inhalations.

The great extent of the pulmonary surface, and the facility with which æriform agents may be introduced through it into the circulation—their complete efficiency and their ready evacuation by respiration—conclusively indicate that the lungs, instead of the stomach, is the best route through which to introduce the proper agents for inducing insensibility. Now, the question arises, can these advantages be secured without danger to the patient? And sufficient time has already elapsed to enable us to reply: *Anæsthetics, when properly used, are perfectly safe.*

At the period of my last visit to Europe, some ten years since, Professor Simpson had then given chloroform to over 8,000 persons without a single fatal result from its use, and by this time he has,

no doubt, more than duplicated that experience. In the Crimean war, it was used commonly and freely. Baudens speaks of several thousand cases in which it had been used without accident, and McLeod reports over 20,000 cases, with only a single fatality. Even when ignorantly and carelessly employed, there is less danger than is commonly apprehended. When last in Paris, I saw it used continually, and freely, and carelessly, with little precaution to dilute the vapor, and by rude means—a sort of bag tied over the mouth and nose of the patient—yet heard of no case of asphyxia from its use. Both chloroform and æther are continually employed in this city, in the hospitals and public institutions, as well as in private practice, with little or no regard to either the quantity or intensity of the vapor, and yet but very few accidents have occurred. In my own practice, I have never seen a death from their use.

But there is another reason for employing anæsthetics which must not be forgotten. *The insensibility* of the patient is a *great convenience to the surgeon.*

How often, when operating in some deep, dark wound, along the course of some great vein, with thin walls, alternately distended and flaccid with the vital current—how often have I dreaded that some unfortunate struggle of the patient would deviate the knife a little from its proper course, and that I, who fain would be the deliverer, should involuntarily become the executioner, seeing my patient perish in my hands by the most appalling form of death! Had he been insensible, I should have felt no alarm.

By the use of anæsthetics, also, the shrieks and cries of the patient are prevented; so that the surgeon's powers are not additionally taxed, either to nerve himself to a very unpleasant task, or to control and encourage the attendants.

This discovery, then, has not only taken from surgery its greatest horrors, but it has also very much increased the facility and safety of operations; and in this way, *the domain of surgery is extended.*

In the removal of tumors with intricate surgical relations, the operator now feels at liberty to take the amount of time required for careful and slow dissection. He performs painful operations on children with little or no fear of subsequent convulsions, and the nervous and timid are so protected from the shock that he is free to assert the dominion of the knife wherever science has decreed and the powers of the human constitution will allow.

But it is the object of this paper not only to show the propriety of inducing insensibility to pain, but also to give some plain and practical

Directions for the use of Anæsthetics.

Of these agents, only two—æther and chloroform—are as yet worthy of consideration; and of these I have always preferred chloroform, for the reason that it is more effective. Æther has

been supposed to be safer in the hands of the inexperienced, but this is clearly no reason why the practiced surgeon should confine himself to the weaker and more inconvenient agent. Æther is longer in producing anæsthesia, is more bulky, and in some cases fails to produce the desired effect. I am in the habit, however, of employing both, commonly commencing with æther, and resorting to chloroform if insensibility is not readily induced.

It is better to employ no special apparatus for inhalation. All that is needed is a common linen handkerchief, on which the liquid is poured. This should be held loosely in the hands of the operator, as in the folded condition it might interfere too much with respiration. If æther is used, little attention is paid to quantity—from two to four ounces being commonly required for an adult; and all the caution necessary is not to exhibit it so rapidly as to excite a cough. If chloroform is employed, less quantity will be required—from one to four drachms being generally sufficient. But care must be taken to dilute the vapor sufficiently with atmospheric air.

During the inhalation the patient should always be in a recumbent position. We must remember that the vapor of chloroform is exceedingly heavy, having a specific gravity more than four times that of common air, with little disposition to diffuse itself. Carbonic acid, which weighs only one and a half times more than common air, may be poured from one vessel into another like water. By reason, then, of its great gravity, the vapor of chloroform passes into the lungs more readily when inhaled in the recumbent posture; and if for any reason we should desire to free the lungs speedily from its presence, we can do so with most facility when the patient is in the same position.

The circulation of the blood through the lungs is now known to depend on the reaction of its carbonized constituents with the oxygen of the air; and in those cases where death has occurred during inhalation, this result is to be attributed rather to the absence of oxygen in the lungs than to the presence of chloroform in the blood.

We may presume that anæsthetic vapors are not poisonous of themselves, but when ignorantly or carelessly used they arrest the circulation in the capillaries of the lungs, as nitrogen or hydrogen would do by exclusion of the necessary oxygen. Hence, in case of asphyxia from their use, where the natural process of respiration is interrupted, we endeavor to substitute it by artificial means. We open the windows to procure fresh air, dash cold water in the face to excite convulsive respiratory movements, turn the patient on his side to lessen the gravitative tendency of the vapor, and make artificial respiration by compressing the ribs after the manner of Dr. Marshall Hall. And when the vapor is sufficiently displaced from the lungs by admixture with atmospheric air, circulation and respiration will both be restored. For these reasons, it was, that Mr. McLeod, in the Crimea, always preferred to use chloroform in the open air.

We see, then, that to *exhibit anæsthetic vapors too rapidly is to*

incur the danger of asphyxia; but, on the other hand, to exhibit them too slowly incommodes the surgeon and prolongs inconveniently the stage of excitement; and a greater quantity of the anæsthetic will also be required, and spasmodic action of the glottis is more likely to occur.

Professor Simpson speaks of one or two minutes as being the proper time to allow for the induction of insensibility, but in this country it is customary to take a longer time, perhaps from three to five minutes.

The full effect of the anæsthetic is indicated by sonorous or even stertorous breathing, which, though apparently serious, is of no importance. The pulse is generally but little affected, though it is often diminished somewhat in frequency and force, and yet I have seen it, when the vapor was being administered too rapidly, suddenly stop, to resume its ordinary motion when the effect of the vapor passed off.

There is another practical fact in regard to the use of inhalations which I do not remember to have noticed. *If the patient vomit, the effect immediately passes off,* and, as he is much more likely to vomit when the stomach is full, he should not be allowed food for some hours previous to inhalation.

In operations where the mouth becomes filled with blood I was formerly apprehensive of strangling, but subsequent observation shows that during anæsthesia deglutition takes place by means of reflex nervous action, in the same manner that uterine contractions occur, notwithstanding the use of these agents.

Within the last year Professor Simpson, of Edinburgh, has recommended a new plan for securing the admixture of the proper quantity of air. It consists in spreading a handkerchief single-fold over the face of the patient, and allowing the liquid to fall drop by drop upon it near the mouth and nose. The quantity of the liquid required by this method is said to be less than what is ordinarily used, but from my experience I should apprehend irritation of the skin, as this is apt to occur in using chloroform and æther by the ordinary method. To prevent this irritation I am in the habit of applying previous to inhalation a little olive oil about the mouth and nostrils. Care should also be taken to prevent the vapor from acting on the eyes.

In my own practice I have been in the habit of using the Scotch chlóroform of Duncan, Flockhart & Co., of Edinburgh, but have also employed that of Dr. Squibb, of Brooklyn, and with pleasure commend the latter for its purity and reliability.

For such reasons then as have been recounted, I desire to direct the attention of the Surgeons of the Army and Navy to the advantages which would accrue from a more extended use of anæsthetics in naval and military practice. I am satisfied that if, in their operations, the pain were more generally prevented many lives would be saved which are now lost from the shock to the nervous system, and that, in all severe cases, the prospect of recovery is

better and the subsequent inflammation is milder when an anæsthetic has been used.

To this conclusion I have not come hastily. Of so much import have I always regarded the prevention of the pain of operations, and so desirable, if it could be practically effected, that ten years before the introduction of anæsthetic vapor I listened patiently and attentively to the claims of animal magnetism to this power to produce insensibility; but found, and I may say with unalloyed regret, that when fairly brought to the test, its most ardent friends were compelled to admit its utter inefficiency, and even since the invention of anæsthetic inhalation, I have carefully tested the power of other agents, such as nitrous oxyde, to produce insensibility to pain, but still consider none of them deserving of mention when compared with chloroform or æther.

In conclusion, perhaps I may say, that these observations and reflections have been made during the intervals taken from a business still pressing, at a time of life when most men desire repose. They are given to the cause of American nationality, and may claim to be at least an old surgeon's offering on the altar of his country. The flag of our Union, the glorious Stars and Stripes, has repeatedly protected me in foreign lands beneath its broad folds, and if what I have written here shall be in any measure successful in preventing the sufferings and prolonging the lives of that noble army who are now serving under my country's banner, I shall receive my reward.

On the Treatment of Suspended Animation under the Influence of Chloroform. By WILLIAM MARCET, F.R.S., Assistant Physician to the Westminster Hospital, etc., etc.

In the *Medical Times and Gazette*, for July 20, I offered a few remarks on the phenomena attending the accumulation of vapors of chloroform in the blood, and insisted on the importance of watching the state of the respiration as well as that of the pulse during the exhibition of this anæsthetic agent. The number for October 28, of the same periodical, containing two new cases of death from chloroform, I may be perhaps allowed to return to this subject, my present object being to suggest a mode of treatment in these cases which to my knowledge has not yet been proposed; and considering the failure which has nearly constantly attended every attempt to restore animation suspended by an overdose or under the influence of chloroform, the following suggestions will be most probably of interest, and also, I trust, of practical utility.

It has frequently occurred to me that, in many instances, the final cause of death from chloroform was owing, not only to its anæsthetic properties, but also partly to spasm of the glottis. I do not mean, however, that the passage of the vapor of chloroform

through the glottis and larynx has the power of causing an involuntary closure of the glottis; and I cannot agree with Dr. Black, of St. Bartholomew's Hospital, who states: "Any concentration of the vapor of chloroform which can be breathed is safe; any condition of dilution which causes the patient to cough or hold his breath is dangerous, and if persevered in for half a minute, may be fatal." I believe a spasmodic closure of the glottis to take place occasionally, from the action of the chloroform which has been absorbed into the blood, and that this obstacle to the admission of air into the lungs, taken in connection with the narcotic or anæsthetic effect of the chloroform circulating in the blood, has been in some, perhaps many, cases the actual cause of death. Should this view be correct, it will follow that if air be allowed to enter the lungs by means of tracheotomy, or by opening the glottis with a trache-tube, or any other operation which will effect the same purpose, life will in such cases be saved.

It may be inferred that spasm of the glottis takes place occasionally under the influence of chloroform.

1st. Because several substances possessing anæsthetic properties are positively known, when present in the blood, to have given rise to closure of the glottis.

2d. Because the symptoms of death from chloroform are consistent, more or less, with death from sudden asphyxia.

3d. Because the *post mortem* appearances after death from chloroform may be accounted for by assuming that death has taken place from asphyxia.

In the three following cases, spasmodic closure of the glottis resulted from the presence of alcohol, carbonic acid, and sulphureted hydrogen in the blood, the physiological properties of these three substances being allied, to a certain extent, to those of chloroform; and in two of the instances under our consideration, life was obviously saved by tracheotomy.

A very interesting case is reported in the volume of the Medico-Chirurgical *Transactions* for 1837, entitled "Case of Recovery from the Insensibility of Intoxication by the Performance of Tracheotomy. By George Sampson, Esq." The patient, aged 31, was brought to Mr. Sampson's house in a state of complete insensibility, after drinking freely of beer, and more than a pint of brandy; all voluntary motions had ceased for at least four hours. The stomach pump being used, drew off between three and four pints of fluid, the greater part of which appeared to consist of brandy. Every means of exciting vomiting was afterwards vainly applied; the man became more comatose, his countenance turgid, and breathing more and more difficult; the pulse grew fainter, and was at last scarcely perceptible. He was then removed to the Infirmary, and a consultation was held with other medical attendants, who arrived in the course of half an hour; at that time every appearance indicated the rapid approach of death, and there was no ground to justify a reasonable hope of recovery. It occurred to Mr. Sampson, when standing by the patient's bed-side, that the extreme difficulty

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of respiration was owing to the existence of "collapse of the glottis," and with this view of the case, he strongly urged that a trial should be given to the operation of tracheotomy. The operation was accordingly performed, without loss of time, by Mr. Andrews. The trachea was no sooner opened than the distension of the veins about the head and neck subsided, the violent efforts of the respiratory muscles ceased, and in about half an hour regular and easy respiration through the wound was freely established. At the same time the pupils became slightly sensible to the stimulus of light, and the pulse returned to the wrist. He continued quiet during the night, but had no return of consciousness till the following morning. The case proceeded very satisfactorily, and the wound being healed in about three weeks, the patient was discharged cured.

This case is particularly interesting, for the analogy between the physiological action of alcohol and chloroform has been quite satisfactorily demonstrated by Messrs. Lallemand, Perrin, and Duroy. Like alcohol, chloroform acts first on the brain, then on the spinal system, and finally on the sympathetic; the brain exerts a certain power of concentrating within its tissue both chloroform and alcohol; the period of excitement produced by chloroform, is not unlike that of alcoholic intoxication; and insensibility equally results when a sufficient dose of alcohol or chloroform has penetrated into the circulation.

If alcoholic poisoning is positively shown to have threatened life from asphyxia owing to spasm of the glottis, I see no reason why death from chloroform should not be due occasionally to the same phenomenon.

The two other cases I have to report have come under my own observation. One of them was an instance of secondary asphyxia, from spasm of the glottis, after immersion in the Serpentine during the skating season. The patient, a middle-aged man, had been entirely under water, but on being taken out, respiration returned, and continued comparatively free until placed in a warm bath, when he suddenly exhibited alarming signs of asphyxia, obviously from spasmodic closure of the glottis. A few minutes later the patient was removed to a bed, when several similar attacks occurred, one of them still more severe than the first. He recovered in the course of some hours.

This is an instance of spasm of the glottis produced by an accumulation of carbonic acid in the circulation. The gas in question possesses anæsthetic properties, and is so far allied to chloroform.

The third case is one of equal interest, although the subject of the observation was a dog. About two years ago, when engaged in injecting an aqueous solution of sulphureted hydrogen into the external jugular vein of a dog, I observed that the animal's respiration, instead of becoming somewhat deeper, as usually happens during this operation, began to fail, and shortly afterwards ceased, without there being the slightest struggle or apparent symptom of

asphyxia from the closure of the glottis. I immediately prepared to have recourse to artificial respiration by means of an instrument I have invented for that purpose. In order to insert a tube into the trachea, I incised this organ, when immediately, to my surprise, the animal commenced breathing through the opening. After a few minutes, free respiration and sensibility returned, and the animal recovered perfectly. It is obvious that, in the present instance, the respiration had been arrested by closure of the glottis, and the animal was dying from asphyxia; had not tracheotomy been performed, the dog would have died with every symptom of syncope. This case, which I report from memory, was witnessed by many of the pupils of the Westminster Hospital. It shows two interesting facts.

1st. That the presence of an excessive quantity of sulphureted hydrogen in the blood may cause death from spasm of the glottis; and, 2d. That on those occasions death takes place without the struggles or convulsions so peculiar to impeded respiration. Consequently, in cases of death from chloroform, the absence of convulsions is no proof that there exists no mechanical obstacle to the free admission of air into the lungs.

The symptoms of death by chloroform are consistent with those of asphyxia. Dr. Snow's book contains a very interesting case of death from chloroform, with symptoms of asphyxia, which was communicated by Dr. Solly to the *Medical Gazette*. This case (No. 12) bears directly on the subject of the present communication. The patient, a porter, aged 48, and apparently in perfect general health, was submitted to chloroform for the removal of a toe-nail. The anæsthetic vapors were administerd by means of an inhaler; after the operation had been performed, and being still insensible, the patient's face became dark, his pulse small, quick, but regular, respiration laborious; his neckerchief was removed and chest exposed to fresh air from a window near to the bed, cold water was dashed on his face, the chest rubbed, and ammonia applied to the nose. After struggling for about a minute, he became still, the skin cold, pulse scarcely perceptible, and soon ceased to be felt at the wrist. Immediately on the appearance of these symptoms artificial respiration was commenced by depressing the ribs with the hands and allowing them to rise again, until the proper apparatus was brought, when respiration was kept up by means of the trachea-tube and bellows, and oxygen gas introduced into the lungs by the same means. Galvanism was also applied, but to no purpose.

Dr. Snow considers there is some obscurity about the above narrative, which I have given as nearly in the same words as those used in the report; in his opinion the symptoms exhibited would be inconsistent with death from chloroform. It appears to me, however, that this is clearly a case of asphyxia from spasm of the glottis under the influence of chloroform, and I cannot help believing that had treacheotomy been performed at the time when artificial respiration was commenced, the patient would have been saved. If most cases of death from chloroform are not attended with evi-

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dent signs of asphyxia, still this is no argument in favor of the absence of spasm of the glottis, for it must be remembered that poisoning by chloroform is a complex phenomenon which results from excessive anæsthesia producing a tendency to paralysis of the muscles, and an action on the heart predisposing to death by cardiac syncope; any spasmodic closure of the glottis occurring under these circumstances would, it may be anticipated, cause sudden death without the recurrence of convulsions, or struggles for breath.

The *post mortem* appearances in cases of death from chloroform do not preclude the idea of death from asphyxia; indeed in cardiac syncope, which is according to Dr. Snow the fatal termination of poisoning by chloroform—"If the blood have not been displaced by artificial respiration or other causes, the right cavities of the heart and the adjoining great veins will be found filled with blood, and the lungs will in many cases be more or less congested. The appearances, in short, will be very much the same as in asphyxia by privation of air which ends in a kind of cardiac syncope." Nothing can be more in favor of the view I am advocating. It must be well understood that I do not consider every case of fatal poisoning by chloroform as owing to spasm of the glottis; and there is every reason to believe that in some instances death takes place from paralysis of the muscles of respiration, in others from cardiac syncope, or from a simultaneous occurrence of both these effects.

If it be admitted that death from chloroform be occasionally owing to spasm of the glottis, then the importance of performing tracheotomy in these cases, and adopting some means of allowing air to enter freely through the wound, will be readily understood. It must be remembered that the cases on record of recovery from suspended animation owing to an overdose of chloroform are very few, and, as a rule, it may be considered that, after the respiration has ceased, and the pulse becomes hardly perceptible at the wrist, death is inevitable. Under these circumstances, any means apparently available should be adopted. The operation of tracheotomy ought to be performed as soon as possible after the respiration has stopped, and the patient assumed that livid countenance known in these cases to precede death; the loss of every second diminishes the chance of saving life. Artificial respiration, if possible, must, however, not be neglected, and should be carried on before, during, and, if necessary, after the operation of tracheotomy has been performed. Artificial respiration is of great importance in connexion with death from chloroform, and I am at present busily engaged inquiring into this subject.—*Medical Times and Gazette, and Boston Journal.*

Strychnia and Morphia.

Mr. John Horsley, analyst for the county of Gloucester, has lately drawn attention to an observation originally made by Dr. Letheby, and confirmed by Dr. Reese and Professor Thomas, of

Philadelphia, that morphia has the power of disguising and destroying the colored reactions by which strychnia is recognized. His investigations have led him to the discovery of a method by which the difficulty thus arising may be overcome, and also to a new test for strychnia. He writes: "I have, however, satisfied myself of another very important fact, viz: that it need not create any alarm or uneasiness in the public mind, for the difficulty in question is more apparent than real; since, in any case where both active principles are capable of extraction from a dead body, the strychnia is effectually separated from the morphia, in a form admirably fitted for identification, by adopting the following simple method, which I had the honor of submitting to the British Association for 1856, viz: to convert the strychnia into a chromic salt, by the addition to the pure and concentrated liquid of a few grains of the neutral chromate of potash, and briskly agitating the mixture with a glass stirrer, for a minute or so, when, if strychnia be present, a more or less flocculent, but crystalline precipitate, of a golden color, will separate and collect at the bottom of the vessel. In the course of a few minutes, the supernatant liquor containing the morphia (which is much longer in precipitating), must be carefully decanted. If now a drop or two of the residue containing the golden-colored strychnian salt be taken up with a pipette, and projected into a small white porcelain dish, and touched with strong sulphuric acid, the usual purple and violet-colored indications of strychnia will be most marked. In this way, a very small quantity of the poison will suffice for numerous chemical experiments, as demonstrated by me before the Chemical Section of the British Association. A similar precipitate of morphia does not react in this way, but is turned of a green color; hence, when morphia is in excess, it has the power of completely masking the colored reaction of strychnia, which, though present, remains passive and unelicited; but, by the process described, the strychnia can be easily separated from the morphia, or any other active vegetable poison with which it may be associated, when once these have been extracted from a dead body in a sufficiently palpable form. Thus much for the method of separating strychnia when present with morphia; but beautiful and delicate as is this method of detection, yet it is very far inferior to a new reagent I have just discovered, viz: the nitroprusside of sodium, which enables me to detect the 100,000th of a grain with the greatest ease! These may be considered large figures, but are arrived at thus: One grain of strychnia is first dissolved in 100 grains of water; then one drop of this solution is mixed with 999 more of water, and a fragment of the nitroprusside of soda added. When dissolved, and well mixed by agitation, a single drop of this solution, equal to the 100,000th of the original grain of strychnia, is let fall into a small white ware dish, and, after evaporation to dryness over a steam bath, is fit for the development of the characteristic color, by merely drawing a glass rod dipped in sulphuric acid across the spot. The 3000th part only, with the best experiment, being the limit of the ordinary

process, the new test, therefore, exceeds the old by 97,000 times the intensity; in other words, it is about 30 times more delicate."—*Med. Times and Gaz.*, June 28, 1862.

On the Pathological Anatomy of Puerperal Fever. By Professor Buhl.

Professor Buhl, of Munich, having examined the bodies of fifty women who died of puerperal fever, states that a constant and characteristic appearance is a pappy, red or dark brown or grayish-black mass lining the inner wall of the uterus, giving forth sometimes a gangrenous and sometimes a putrefactive smell. It is this matter which supplies the poisonous infection of puerperal fever; but as to the cause of the production of the fever, differences of opinion prevail; some regarding it as the consequence of the immediate passage of poisonous matter into the womb, while others think that a preliminary poisoning of the blood by misasmata takes place, the corrupted mass being only a secondary result. Anatomically, we may distinguish two forms of puerperal fever—puerperal pyæmia and puerperal peritonitis—forms which may be clinically distinguished, as it is of importance in prognosis that they should be so.

Puerperal pyæmia does not usually prove fatal before the ninth day, and frequently not until after the third week. It is chiefly met with where the disease does not put on an epidemic form, the veins being the channel of infection; coagula, accompanied by suppuration, being found in the veins of the walls of uterus, in a pampiniform plexus or in a spermatic vein. In no instance did the author ever find both spermatic veins obstructed, and in only one case was the entire vena cava inferior filled with adherent coagula. These coagula and their subsequent caseous metamorphosis are quite sufficient to establish the existence of puerperal pyæmia, the so called metastatic abscesses being seldom met with. Œdema of the lungs and ecchymosis of the pleura were frequently met with by the author.

The puerperal peritonitis was more frequent, more violent, and more rapidly fatal than the puerperal pyæmia, inasmuch as death sometimes occurred within two days after delivery, and in but few cases was delayed to the third week. Of the 32 cases of this variety only 2 were chronic, proving fatal in the course of six or eight weeks. In all the cases purulent exudation was found, in 18 instances occupying the tubes, and in 14 the subserous tissue of the uterus. The two conditions were found combined in only 4 instances, and a plugged condition of the veins was observed only in 5 instances. Of the 18 instances in which puerperal pyæmia occurred, in only 2 was there pus in the tubes, and in only 1 subserous effusion of pus; so that of 20 cases of tubal suppuration, in 18 peritonitis was present, and of the 14 cases of subserous suppuration

peritonitis occurred in 13. On the other hand, of 23 cases of purulent coagula of the veins, in only 5 did peritonitis occur, and in all these there was subseous or tubal suppuration also, and in 16 cases in whish these parts exhibited no pus, no peritonitis took place. The disease of the veins thus bore no relation to the occurrence of peritonitis. It results from these facts, that peritonitis may arise either from the immediate passage of the poisonous material from the uterus through the tubes, or from the conveyance of this from the inner wall of the uterus by the lymphatics. The supposition that the pus may have proceeded from the perritoneum into the tubes is negatived by the fact of these having been free of it in 14 cases; and the pus of the peri-uterine, subserous tissue or of the lymphatic vessels must be regarded rather as a consequence than a cause of the peritonitis, inasmuch as it was absent here in twenty instances. The prognosis is not alike in these two modes of origin of the peritonitis. That induced by the pus from the tubes is a much slighter and more simple inflammatory process, met with when there is little or no epidemic extension of the disease; while the peritonitis resulting from lymphatic absorption is a much severer form of disease, preceding or accompanying general infection, and is especially met with in the epidemic form.

In both of the principal forms of puerperal fever, besides the morbid uterine appearances, there were found—1. Almost constantly swelling and watery infiltration of the retro-peritoneal, inguinal, and (though seldomer) the mesenteric glands. 2. Osteophytes on the internal surface of the cranium. 3. In several cases, especially in pyæmia and lymphatic absorption, a distention of the cortical substance of the kidney, together with the microscopical appearances corresponding to the acute stage of Bright's disease. In only two of fifty individuals was tuberculosis found.—*Froriep's Notizen.* 1861. No. 13.—*Med. Times and Gazette.*

Inspection of the U. S. Military Hospitals by the Sanitary Commission.

This inspection, by a body of physicians and surgeons from civil life, to be kept up, week after week, until May next, meets with general approval in the community. No measure could have been advised better calculated to quiet the public mind on the all-important subject of the care of those dear to them, whose patriotism has made them the victims of the casualties or the diseases which this wretched war has brought upon them. There have been so many stories of mismanagement, neglect and cruelty in the newspapers, that it was high time these evils were corrected, if they really existed, or that the popular mind should be authoritatively disabused of false impressions which were causing an untold amount of wretchedness to sympathizing hearts at home. We have been strongly inclined to the opinion that much has been

said in newspaper articles on this subject, which, sifted down, would prove to be the grossest exaggeration. The proposed inspection will clear up all uncertainty about it. And we hail as strong presumptive evidence that there has been a great overstatement, to say the least, of any defects of hospital administration, the fact, which we learn on the best authority, that the gentlemen in charge of Government hospitals receive with the most cordial courtesy the visitors of the Commission, showing the greatest alacrity to facilitate their examination, and manifesting a desire in every way to carry out the plan proposed This is a good augury that such evils as may exist are not at any rate those of willful neglect and cruelty.

The inspectors, in making their visits, are furnished by the Surgeon-General of the United States Army with a document enjoining upon all medical officers to give them free admission into all hospitals, and to render them every practicable facility and assistance in the pursuit of their investigations. That the examination they are expected to make is of the most thorough and searching character, may be learned from the details in the following extract from the paper which will be placed in the hands of each inspector on commencing his tour of duty, which has been kindly furnished us by Dr. Clark, Inspector-in-Chief.—*Boston Med. & Surg. Journal.*

In the performance of your duty it is the desire of the Commission that you should cause as little inconvenience as possible to the medical officers of the hospitals you may visit, extending to them the deference and courtesy proper to their responsible positions; and the Commission is confident that, as members of the same profession, with the same high objects in view, you will be welcomed by them with equal courtesy, and every facility afforded you of obtaining the information you seek. It is proper to state to you that your visit is made by invitation of the proper authorities, and at the express desire of the Surgeon-General of the Army, to whom a digest of your report will be presented. If you should encounter any serious obstruction in the performance of your duty, please report the facts fully and promptly to Mr. Olmsted, at Washington, and proceed without delay to the next hospital in your circuit.

It is desired that your report should embrace your observations on the points, and answers to the questions which follow—stated under the same heads, and, as nearly as possible, in the same order:—

Locality of the hospital; character of its site in regard to healthfulness; character of soil; prevailing winds; proximity of other buildings—of railroads—of navigable river; elevation; style of building.

Surgeon in charge; name; rank.

Number of assistant medical officers; if employed by contract

by Government; if so, if subjected to examination before employment, and by whom.

Number of hospital stewards, ward-masters, male and female nurses; estimate of character and efficiency.

Number of patients in hospital; examine "Morning Report," and judge if books are carefully and accurately kept.

General character and degree of gravity of cases before treatment; proportion of medical and surgical cases; proportion of convalescents; are they promptly returned to duty, or discharged the service?

Estimate the degree of medical and surgical skill of medical officers, and the humanity and kindness evinced by them, and also by the nurses.

At what hours are the regular visits made to the sick, and by what officers of the hospital?

How often does the surgeon in charge visit the wards?

Rate of mortality; success of surgical operations; is there a dead-house? Are *post-mortem* examinations practiced? Are pathological specimens preserved? Are burials conducted with propriety? Are means taken to mark graves, so that they can be recognized by friends? Are chaplains, or proper religious advisers, at all times accessible to the sick?

Diet: is it sufficient in quantity, and good in quality? suited to conditions of patients? well cooked? served warm? sufficiently varied? Are the coffee and tea good? How often do the patients get fresh beef? Is the beef-tea properly made and freely provided?

Is the hospital fund sufficient to secure an ample supply of milk, butter, eggs, chickens, ale, porter, and other delicacies and necessaries for the sick not included in the supply tables of the commissary and hospital departments?

[Government regulations allow the very ample ration issued by the commissary department to be drawn at its commuted value in money, by the surgeon in charge of a hospital, for the sick soldiers under his care, and this constitutes the hospital fund, with which all extra necessaries for the sick are to be purchased under his direction. The amount of this fund, with proper management, is amply sufficient for the purpose for which it is designed. See Revised Army Regulations for Medical Department.]

Is the hospital fund allowed to accumulate while the sick are in want of any thing?

Are the stimulants employed of good quality and judiciously administered?

Police: Is strict cleanliness observed in the wards—in their floors; in bedsteads and bedding; in clothing, in vessels used for food; spittoons; bed-pans; sinks, and water-closets? In the kitchen and cooking utensils? In the apothecary shop?

Are the knapsacks and property of the soldiers properly cared for by the ward-masters?

Is the water supply ample? for washing, bathing, water-closets, and in case of fire? Is its quality good?

Are the provisions against fire complete? Are there fire-escapes by means of windows in each ward cut down to the floor, or other sufficient means of egress?

[Many hospitals, being frame buildings, are particularly liable to the danger of fire, and the helplessness of the sick renders it especially necessary that ample provision should be made in every possible way, by fire engines, drilling the attendants, supply of buckets, care in use of lights and fires, ether, alcohol, camphene, kerosene, &c., &c., to secure their safety.]

What means are employed for lighting and heating the wards?

Is the drainage completely provided for? Where tents are occupied by the sick, are they provided with floors with a free circulation of air beneath them, and with provision against collection of rubbish? Are they secure against rain, and are trenches dug when necessary to carry it off?

Are the grounds around the hospital buildings and tents kept clean?

Is the supply of fresh air ample, with all possible provision for ventilation?

What is the average air-space allowed for each patient?

[This includes the all-important question of crowding the sick—a most common and fatal error. It is well to bear in mind that every sick man has a right to 1200 cubic feet of air as a minimum estimate. By multiplying the length, breadth and heighth of each ward, and dividing by the number of beds it contains, the answer to the question is obtained.]

Have continued fever or dysentery assumed a contagious character?

Have erysipelas, hospital gangrene, or pyæmia prevailed?

In such event, have the patients been promptly scattered?

Are deodorizing agents judiciously employed?

[In the absence of chlorides of lime and soda, and the more common disinfectants, gypsum or plaster of Paris, sulphate of iron and coal-tar answer this purpose admirably.]

Are screens provided for isolating dying patients?

Is the supply of laundresses and means of washing clothing and bedding sufficient?

Is there a sufficient supply of mattrasses, bed-sacks, straw, blankets, sheets, and mosquito-bars?

Is the straw used for bedding changed and burned at proper intervals?

Is there a sufficient provision of clothing, shirts, drawers, socks and slippers for the patients?

[By recent law of Congress, enforced by the Secretary of War upon the Quartermaster's Department, soldiers who have lost their clothing through the casualties of war, are entitled to an additional issue, without deduction from their pay. By another appropriation by Congress, provision has been made for obtaining, through

the medical purveyors, clothing for the sick in hospitals. When from unavoidable deficiency said clothing for the sick cannot be obtained through the proper channels, the Sanitary Commission will afford the necessary supply.]

Are invalided soldiers, discharged on certificates of disability, supplied with full information as to their rights under the pension law? and of the provision made by Government for furnishing those who are mutilated with artificial limbs?

Are patients kept closely cropped, and proper precautions taken against vermin?

Is there any lack of reading matter for convalescents? of games? of tobacco?

—

In addition to the foregoing, you are invited to furnish any further suggestions or details you may deem worthy of record.

In any case of doubt as to the nature of your duty, you will please apply to the General Secretary, at the Central Office, Washington, D. C.

It is desirable that you should render yourself familiar with the Revised Army Regulations, as far as they concern the Medical Department, and also with all circulars and orders emanating from the Surgeon-General's office.

By order of the Executive Committee,

W. H. Van Buren, M.D.
C. R. Agnew, M.D.
Wolcott Gibbs, M.D.

Is the Produce of Diseased Animals Unwholesome as Human Food? Being a Communication read before the Metropolitan Association of the Medical Officers of Health on the 16th of April. By John Gamgee, Principal of the New Veterinary College, Edinburgh.

In undertaking to collect information from all sources on the innocuous or unwholesome character of meat and milk of animals affected with disease, or dying from unnatural causes, I was aware from the first how very difficult it was to condense, in a connected form, and to draw satisfactory conclusions from fragmentary notes scattered throughout medical and veterinary treatises, journals, &c., which have been published from ancient times to the present day. I do not presume, and, indeed, have not attempted, to write an exhaustive essay, but rather to classify the knowledge it has been in my power to obtain, either from personal observation, or from my readings, during the last dozen years. We are very much in the same position as to facts concerning animal food, as a cause of human disease, as we were fifty years ago, or perhaps not more than twenty-five, in relation to impure air and water. It was

known that people might be suffocated in a room in which they inclosed themselves to breathe the fumes of charcoal, and that human beings might be so packed as to die within a few hours from suffocation. Alarming facts were occasionally obtained of a death or deaths from foul air, but no one suspected that epidemic diseases and contagious fevers were constantly induced by over-crowding, deficient systems of ventilation, drainage, &c. It is found that the physician in active practice cannot, however careful he may be, trace each individual case to its true source. Much more is done in this direction at the present time than formerly, but the cultivators of sanitary science—the students of etiology, who aim entirely at prevention, rather than relieving and curing the diseased—have demonstrated that we must study the influence of causes *per se*, and not attempt, from an observation of effects, to determine at once how they have been induced. The history of parasitic diseases, so much enriched by the observations of zoologists during the last ten or fifteen years, demonstrates how impossible it is to adhere to the old exclusive method of studying medicine by clinical observations alone. It is with veterinary as with human medical science. We have arrived at a period when there is no limit to the studies we may engage in, with a view to obtain a complete knowledge regarding the laws which govern the origin and development of disease. It is the spirit of universal observation which must be encouraged amongst pathologists; and I have ventured to select a subject for special comment which offers a wide and untouched field for original investigation. We can refer to violent attacks of dysentery, to malignant pustule, mysterious and fearfully sudden deaths, resulting from the consumption of impure animal food; but we know not to what extent and in what way it aids in constantly raising human mortality; what per centage of deaths, if any, must be annually attributed to the constant and unchecked traffic in the carcasses of diseased animals, or the milk of foully-kept or diseased cows. My conviction is so strong, that of all food adulterations, none operate so constantly and fatally as the deteriorations of animal produce, from the causes hereafter to be noted, that I have for some years aimed at exposing the danger of infamous practices, which have assumed the form of a regular and legitimate trade, resulting from the unfortunate prevalence, especially within the last twenty-three years, of contagious cattle plagues in the British dominions.

It is an old practice, in remote agricultural districts, to save the flesh of animals dying suddenly, by bleeding before signs of life have entirely passed away. But when pleuro-pneumonia spread throughout Britain, it created great alarm. Veterinians were consulted; they failed in curing the disease; farmers and cowkeepers were often ruined; many adopted the practice of calling professional aid until a change of system or bankruptcy proved the only alternative. Too well have many avoided the latter! Had they not, Government would have been warned ere this, and we might

probably not have to record to-day the terrific mortality prevailing very extensively amongst cattle throughout the country, which is borne silently by stockowners generally, because they know how to save and make money by permitting the slaughter of diseased animals for human food. In the city of Edinburgh there are dairymen who never knew what it was to make money until pleuropneumonia appeared. They originally paid £10 or £15 for a rich milking Ayrshire, which they kept a twelvemonth or more. They now pay £25 or £30 for a fat cross-bred short-horn cow, which they calculate on selling diseased within three months from entering their dairy, and they find the latter system most profitable. I have met with much active opposition on the part of the dairymen in this city, in my efforts to adopt means for the prevention of disease, and to check the traffic in diseased animals. They have gone so far as to say, "We do not want disease out of the country. It is keeping every thing high."

I have no hesitation in stating, that the prevailing cattle-plagues can be prevented—that the trade in diseased animals is opposed to our agricultural prosperity—that such trade is ruinous to the nation in perpetuating foreign diseases on British soil, and that it is a powerful cause in the production of human diseases. An effectual check on the fraud daily practiced of selling diseased for healthy meat would confer a lasting boon on the nation at large and on agriculture in particular. It is the hope that such a check may be insisted on by the medical officers of health, and by the public generally, that I lay before you this imperfect sketch on the unwholesome qualities of diseased meat and milk.

The most convenient and satisfactory plan that has suggested itself to me for the purposes of this essay, is to classify the impurities known to us as pervading animal food. They are as follows:

Firstly—Cadaveric venom and animal poisons of undetermined nature, developed spontaneously in health or disease.

Secondly—Animal poisons, well known from their effects in creating specific contagious diseases. These effects are constant, if circumstances are favorable for their development, and unchangeable; some of these poisons affect animals alone, and others both man and animals.

Thirdly—Organic poisons the result of decomposition. These vary much according to the circumstances under which putrefaction is encouraged; and they differ from the specific poisons alluded to above.

Fourthly—Mineral and vegetable poisons absorbed into the systems of animals, and which contaminate the flesh and milk so as to render these unfit for human food.

Fifthly and lastly—Parasitic animals and vegetables inducing disease in man and animals.

I. Cadaveric Venom, including Animal Poisons of undetermined nature, developed spontaneously in health or disease.—I might probably be more correct in using the singular,

poison, rather than the plural, under this head. The effects have been so similar when observed in the human subject, that I am inclined to regard as one and the same the deleterious principle developed in an infuriated and over-driven ox, a passionate woman, the cadaveric venom of the human subject, or that of human beings or animals suffering many hours in labor, or from parturient fever. The poison depends, apparently, on the effects of excitement, exhaustion, or pain on the nervous system generally. Kill an animal in health, and often in disease, and there is no danger if the anatomist inflicts on himself a dissection wound; but this is not the case with wounds received in dissecting the human body. The conditions of death are totally different in man and animals; the mental influences affecting the one, and the perfectly quiescent and unheeding state of the latter, at once suggest how very materially the tissues may be affected in death in man, and not in the slaughtered ox, or even in the dying horse or dog.

There is a very active cadaveric venom in an animal goaded and hunted until it becomes infuriated. I have frequently spoken to butchers on this subject, and have been informed how they have suffered from cuts received in dressing the carcasses of such animals. The change in the muscular system from death under these circumstances is very manifest; to use the butcher's expression, "the flesh is black," and no part of it has the bright normal flesh-tint seen in the ox killed in a quiet state. The form of disease in man induced by eating the flesh of an over-driven ox is violent dysentery, with considerable febrile excitement. The continental inspectors of meat, who are principally veterinary surgeons, declare that the over-driving may act as an exciting cause to malignant anthrax; but there is a very remarkable difference between the effects of eating the flesh of an over-driven ox and that of an animal dying from a form of anthrax. I shall notice this further on, but must refer to my experience of traveling diseased animals by road or rail. Within the last few years splenic apoplexy—the *sang de rate* of French authors—has appeared in some of the best farms in England and Scotland. It is the result of plethora, and in the majority of instances is unconnected with the development of a specific poison, and is therefore non-contagious. It is remarkably favored by animals being inclosed or tied up in stalls, and one of the most ready plans that I have discovered to prevent a fatal apoplexy, when the premonitory signs are witnessed, is to move the animal about and travel it on the road; in no instance that cattle have been traveled after the appearance of the first symptoms of splenic apoplexy, have I known the apoplectic stroke to occur, though several hours' journey by rail had to be made before reaching a large town, where the cattle would be slaughtered. I am inclined to think that, as in anthrax and in the over-driven ox, we have the same ecchymoses, dark color of the flesh, and other post-mortem signs, veterinarians have confounded the two conditions.

The attention of veterinarians has been frequently turned to the severe eruptions of ecthyma which occur on their arms in attending

cases of difficult labor. Similar observations have been made by human obstetricians in their practice.

In the *Edinburgh Veterinary Review* for July, 1858, there is a report of an attack by which I suffered, in common with other persons, that attended a parturient cow. In considering the nature of the poison, I then mentioned that it was not only in the local secretion, but in the animal's system, that it might be found, and for the following reasons:

1*stly*. The animals which, for a succession of many hours, are exhausted by the pains of labor and the interference of men, very frequently perish, notwithstanding that delivery is accomplished. The cause of death is often spoken of as metritis, but the animals *rapidly* sink in a manner which inflammation of the womb alone can scarcely account for.

2*ndly*. The flesh of such cows has been proved to be injurious, if partaken of by men. In support of this statement I shall simply transcribe Noirot's report of a case which recently occurred in Prussia.*

"On the 17th of June, 1856, on the estate of Grüneberg, in the district of Prenzlau, was slaughtered a cow, otherwise healthy, but which a veterinary surgeon could not deliver of a calf. On the 18th of June a portion of the meat was fried for some workmen, and the day after another portion was cooked for the servants and master of the castle. Almost all the persons who partook of the food were taken ill in from four to twenty-four hours, manifesting symptoms of violent colicky pains, with vomiting and diarrhœa. A surgeon was called, and declared that it was cholera. He dined at the castle, ate of the cow, and the day after was seized with the same symptoms as his patients. On the evening of the 21st of June Dr. Rehfeldt, of Prenzlau, was summoned to attend the sick people at the castle; they were forty in number, all having eaten of the cow. They all showed the same symptoms—abundant diarrhœa, yellow and watery stools, burning sensation in the stomach, intense suffering, insatiable thirst, vertigo, cephalalgia, excessive debility, almost amounting to paralysis, pale cold face, sunken eyes, hollow cheeks, small and accelerated pulse.

"Careful investigation brought to light that none but the individuals that had partaken of the meat were ill, and no analogous affection existed about the country. It was also seen that the intensity of the symptoms in each case was in proportion to the quantity of meat that had been eaten, and the individuals that were most ill had eaten of it two days running. In no case had the first symptoms occurred in less than from four to six hours after the unwholesome meat had been swallowed, and some individuals were only attacked after thirty or forty hours. The kind of poisoning in these cases was not the result of direct action on the digestive organs, inasmuch as nothing indicated an inflamma-

* See *Annuaire de Litterature Medicale Etrangere pour* 1857. Par M. L. Noirot. Paris, 1857. Also *Medicinische Zeitung*, No. 43, 1856.

tory state of these organs. Pressure on the abdomen gave rise to no pain, not even when the colicky symptoms were at their highest. All the circumstances indicated the introduction of a poison into the blood, and this poisonous principle existed in the flesh of the cow. Suspicion fell on the kitchen utensils, but it was found that the meat had been cooked in very different ways, and the meat itself must have been possessed of noxious properties. Five persons fell ill in a dairy where some of the raw meat had been sent. One of these, a woman, suffering from chronic disease, died.

"The generative organs of the cow could not be found. The chemical analysis of the flesh gave no result. It is probable that before the cow was slaughtered, gangrene of the uterus and a putrid puerperal fever had set in. Cooking had not destroyed its poisonous principle. This instance serves to show how dangerous it is to allow diseased animals to be sold to the butcher.

"On the 26th of June, with the exception of a woman, and another, a sickly old man, who died, all were restored to health; some, however, remained for a considerable time in an enfeebled state."

3rdly. Although the *most common form* of parturient fever in animals is known to occur in well-nourished cows that have had no difficulty in labor, still many cases, which have been set down as cases of metritis accompanied by putrid fever, and have been considered to arise from the absorption of putrefying elements from the genital organs, are similar to those conditions of the system in which there is danger of introduction of the arm in the vagina. The carcasses of the animals that have died from parturient fever, like those of animals dying from simple protracted labor, are poisonous, and induce interic disorders if eaten.

There is a very significant general fear of parturient cows being slaughtered as human food, which I have heard expressed by butchers; but I have known many cases in which such animals have been permitted to pass, and indeed know that parturient cows are killed like other diseased animals for human food, in England as well as Scotland. It is important to notice, that no person could tell the carcass of a cow that had died from parturient fever from that of animals even in health sometimes, and it is essential to inspect the cow, whilst being dressed by the butcher, to examine the internal organs.

In the above-mentioned article I remark, that we cannot deny a certain degree of resemblance between the effects of the element which proves irritating to the hand or arm of the physician-accoucher and the veterinary surgeon. No doubt there is great similarity in the condition of system attendant on protracted labor in the human female and our domestic quadrupeds. The similarity is probably quite as great as between some of the forms of fever attendant on parturition, and which are proved to be contagious. As regards the human being, it has also been demonstrated that there is some similarity between the cadaveric poison and the puerperal.

This class of poisons is not due to putrefaction, and I may conclude this section of this essay with another quotation from the paper on "Ecthyma Simplex." I then said, "It is my impression that putrefaction is entirely opposed to the development of the genuine cadaveric venom. We cannot understand a material difference between putrefactive change in the body of a man and the body of a horse, still we may dissect as many horses as we like, wounding ourselves each time, unless they be glandered, without suffering. Occasionally a dissection-wound procured in dividing the tissues of an ass or horse may suppurate, but we have observed that this results generally when peculiar circumstances, such as breathing foul atmosphere, &c., have seriously affected the system of the dissector. I would rather consider the mode of death as influenced by the physiological constitution of man and the lower animals in studying the cause of the development of a cadaveric venom in the human body. The intelligence and highly-developed nervous system of man completely excludes any chance of drawing an analogy between the conditions of death in man and the conditions of death in the lower animals. But apart from this, we find that the lower animals are very frequently—almost invariably for dissection—killed when enjoying constitutional vigor and health; but this is not the case in man; and we observe that the cadaveric venom is most severe from bodies of individuals that have died of constitutional diseases, and especially *from females that have fallen victims to puerperal fever.* Death in man is preceded by morbid changes; it follows an *exhausting process,* both *mental and constitutional.* It has yet to be discovered what influence this bears on the tissues so as to render them in some way different from the structures of animals that have died tranquilly, without previous nervous excitement or prostrating diseased action."

II. Animal Poisons well known from their Effects in Inducing Specific Contagious Diseases.—At the head of this class we have the anthrax poison; and a few remarks on anthrax in animals may not be inappropriate. It is an enzootic disease peculiar to many districts in different countries of the world. Though thus springing in special localities, it may, and does, rage as an epizootic. The causes essential for its production are the plethoric state and heat. The warmer the climate, the more common and deadly is anthrax; and there are countries, such as our own, where the disease is seen, but is rarely attended with the development of the anthrax poison. Thus the braxy in sheep is the same disease as the *miltzbrand* of the Germans, and the *fièvre carbonculaire* of the French. It renders the flesh of these animals poisonous in warm countries; in our Scottish hills braxy hams have been eaten with impunity from time immemorial. Again, the black quarter, quarter evil, quarter garget, black leg of many parts of the United Kingdom, is the malignant anthrax of France, Germany, Italy, and many other warmer countries than ours. I state this from personal observation; and remember specially see-

ing a young bullock carted into the Ferrara slaughter-house to be dressed and sold, condemned by Professor Maffei, and buried. The animal died from what we know here by the many names mentioned above. A jobber disinterred the carcass at night-time, and transferred the flesh in sacks, which he carried on his back a distance of a few hundred yards to a hiding-place. Next day this man was seized with gangrenous erysipelas of the back, and died in three days. This occurred in the hot summer of 1854.

It is the terrible virulence of the anthrax poison abroad that has led to the excellent organization of the slaughter-houses everywhere to be found, and to the appointment of qualified professional inspectors.

The cases of communication of malignant anthrax from animals to man are so numerous, that it is almost impossible to refer to the whole, or even to a large proportion of them, in this paper. There are, doubtless, numerous cases of this description that have occurred in this country, but they are not recorded, and have often been ill-observed, or not traced to their true cause. I have evidence of two well-marked instances in which serious disease and deaths in families have occurred in Aberdeenshire. The one case was reported to me by Dr. Keith, of Aberdeen, in 1856, and the other was mentioned to me by one of my students, Mr. John Morris, of Aberdeen. I have been informed by a most intelligent dairyman, that, several years ago, in a village in Dumfries-shire, a calf was slaughtered suffering from quarter-ill. It was eaten, and many persons suffered very severely—some died. These cases demonstrate that occasionally the anthrax poison is developed as far north as Scotland. It is doubtlessly more frequently produced in England; and on the occasion of my examining an aged cow that was slaughtered from an attack of black-quarter—in London, in 1851, I was told that accidents had been repeatedly observed amongst butchers from dressing such carcasses. One man had lost his arm; another had to suffer amputation of the hand, and various other cases were alluded to. Dr. Headlam Greenhow, in a "Report on Murrain in Horned Cattle," published in 1857, says that carbuncular murrain is happily unknown in this country. This is not the fact, as occasional outbreaks of glossanthrax have occurred, and I have already stated that the great difference between carbuncular disease here, and in warmer climates, is the more constant development of an active anthrax poison in the latter. I think there cannot be a doubt as to the injurious results of eating flesh of animals that have died of carbuncular fever, and contradictory opinions are based on observations of cases of unequal severity, occurring in different localities, and on the protecting influence of cooking, which destroys the potency of the virus.

Hübner* furnishes us with the symptoms preceding the death of two dogs that died from eating the flesh of a sheep affected with anthrax. The brain was affected, and symptoms of stupor appeared. This author alludes to a shepherd who found a dead raven

Zoitschrift fur die gesammte Theirheilkunde, 1842.

lying by the carcass of a sheep that had died of anthrax, and had been apparently poisoned by eating the flesh. Dr. Vix, in a note appended to Hübner's paper, says: "Three years ago (1839) I performed a post-mortem examination of an ox that had died of anthrax; my dog licked some of the blood that had flown on the ground, and in the course of twelve hours gangrenous pustules appeared in the mouth, the head became much swollen, and the animal was only saved by great care."

Dr. Schwab, of Munich,* recorded a case in which eight families suffered from eating the flesh of a calf that had died of carbuncular fever; three deaths occurred. Coste mentions in *Omodei's Annali Universali*, for 1844, that many persons were attacked with a nervous fever from eating parts of a cow that had succumbed to anthrax. Renault observed in the department of the Nievre, in 1846, a case in which a man suffered from malignant pustule, from being stung by a fly, whilst standing near the carcass of an animal that had died of anthrax, and another individual died of the disease after skinning an ox. Mangin, in 1847, refers to pigs and dogs dying from eating the flesh of cattle that have been lost from anthrax.

In the *Lyons Veterinary Journal* for 1850, a very singular case is recorded. A cow died of carbuncular fever, and its flesh was given to several women, who cooked and ate it. Two of these persons became affected several days after with pustules on their arms, and all showed signs of malignant anthrax. One woman died at the end of a week, and the others later.

Bearing on my remark, that heat is essential to the full development of the anthrax poison, is an interesting observation by Luscan.† At a meeting of the Societe Veterinaire de Lot et Garonne, this gentleman said that he seized the opportunity to draw attention to the fact that a high temperature increased the severity of anthrax. Thus he had seen dogs eating with impunity the flesh of oxen that had died of the disease in spring and in autumn, whereas others died after eating such flesh in the hot months of summer. In commenting on this, Lafosse wrote: "Here are facts which, added to the observations made by Bertin at the Guadeloupe, and to those already very numerons and reputed in the annals of science, demonstrate how much circumspection should be used before declaring in favor or against the innocuous nature of the flesh of animals dying from carbuncular fever." M. Pradel de Castres, in a report to the Prefect of Tarn, states that dogs and magpies died after having eaten of carcasses of cattle that had perished from this disease. In the same journal from which I have made these quotations, Causse, veterinary surgeon at Castlenaudary, records two very severe cases of malignant pustule in man, from the individuals skinning an ox which had died of anthrax. Gerlach records a case in 1852 of a man dying from eating such flesh. The same author, in his observations on Prussian veterin-

* *Eininge falle von Anthrax vergiftung*, 1844.
† *Journal des Veterinaires du Midi*, 1852.

ary practice for 1854, says that about fifty persons had suffered during the year from the communication of anthrax by eating the flesh of diseased animals; six of them died. Eleven pigs and two dogs succumbed after devouring similar meat. A very remarkable instance is recorded in the *Gazette Medical de Lyon* for the same year. A cow died of carbuncular fever, and thirty-six persons ate her flesh. Twelve of these died, and the others recovered under careful treatment.

The cases I have here quoted are in addition to many you will find in Heusinger, Delafond, and in the works of other authors on malignant pustule. It is difficult to say if splenic apoplexy may not occasionally assume all the virulence and characters of anthrax. Thus, in the last number of the *Edinburgh Veterinary Review*, it will be found that Mr. Aris, of Wellingborough, Northamptonshire, states that pigs have died from eating the offal of cattle that have succumbed in his district from splenic apoplexy.

I shall conclude my remarks on the use of the flesh of animals that have died of anthrax by the following statement:

1stly, The malady described by Continental authors as anthrax or carbuncular fever, and which attacks man and all-warm-blooded animals, occurs in Great Britain.

2ndly, The anthrax poison induces malignant pustule in man, but with a very different degree of severity in different cases. A certain temperature is essential for the development of this poison, and from this circumstance it only occasionally manifests its virulent properties in this country. This poison may act with great violence on the unabraded skin, or on being introduced into the blood by a wound, or into the stomach, especially if the flesh be raw.

3dly, The disease in man, produced by eating the flesh, may sometimes be a diarrhœa; but more frequently a form of putrid fever, with malignant pustules on different parts of the body.

4thly, The post-mortem appearance of animals that have died of this disease are often localized in one quarter of the carcass, which may be removed, and the other quarters sold, much to the danger of human life. This indicates how necessary it is to have professional inspectors to slaughter-houses.

Milk of Cows that have Died of Anthrax.—Delafond says that whenever he has examined the milk of cows with carbuncular fever, it has possessed a nauseous odor, a dirty-white color, and decomposed rapidly. The slightest elevation of temperature led to curdling of the casein; allowing it to rest for six hours, red streaks appear, owing to the coloring matter of blood. One of the most remarkable facts concerning the unwholesome quality of the milk is recorded by Dr. Chisholm. It occurred in 1795, in the island of Barbadoes, in the family of a Mr. Commin, a planter, whose daughter drank the milk of a cow suffering from anthrax, and had a severe attack of the disease, which nearly terminated fatally. Gohier witnessed at Tramis the ill effects of such milk on a man who was attacked with severe diarrhœa, associated with great weakness. In 1809, five persons in one family suffered from dis-

eased goat's milk. Calves take the disease by sucking their dams, (Desplas,) though it has been stated that an infant has been known to drink the milk with impunity. This discrepancy is accounted for by the irregularity in the development and virulence of the poison. Metzger, Lappe, Heusinger, Spinola, and Virchow assert that the milk is often poisonous and always attended with great danger if swallowed by human beings.

Contagious Typhoid Fever Poison.—This malady, the Steppe disease of Rinderpest, the cattle plague, which develops spontaneously only in Southern Russia and Siberia, spreads alone by contagion westward. It is probably the most exclusively and actively contagious disease affecting any animal; but it appears certain that the flesh is not rendered poisonous, and that human beings can eat it with impunity. The most remarkable fact connected with the disease is, that dogs having devoured the flesh of oxen dying of this enteric fever, have communicated the disease to otherwise uninfected districts. Sheep, who are not subject to the malady, are capable of carrying the contagion, and the same may be said of horses, pigs, cats, etc. The milk, and the butter made from the milk, have produced alarming symptoms in human beings and dogs.

The produce of cattle dying from the cattle plague is condemned as unmarketable, from the great facility with which the malady is propagated. The virus is so indestructible, that there are well-attested facts to prove that opening the graves of animals slaughtered years before for the contagious fever, has led to a fearful outbreak of this terrible disease. It cannot reach our country, from the limitation to its spread received by the vigilance of the Prussian and Austrian Governments. British observers witnessed this disease during the Crimean war.

Eruptive Fever Poisons.—The only malady that I need refer to under this head is the epizootic aphtha, or vesicular murrain. It is also called eczema epizootica. Foot and mouth disease, *maul u. klauenseuche* by the Germans, *la cocotte* by the French.

I need not detain you by observations on the flesh, which is deteriorated from the circumstance that animals rarely die from epizootic aphtha, unless from the violence of an irritative fever, which occasionally assumes a typhus character, as in other instances of disease attended with the presence of a blood-poison, and from emaciation and hectic. The last that I dissected was that of a yearling in a state of extreme emaciation, and it died from inanition, owing to inability to eat from extreme soreness of the mouth. The animal had not been treated, and had proper care been used to feed it on gruel and other sloppy diet, it would certainly have lived.

The milk secreted by cows suffering from epizootic aphtha varies in quality and quantity at different stages of the disorder. During the early period of the eruption the secretion is unaffected, but when the vesicles are developed on the teats, they burst in the act of milking, and the virus falls in the milk. The pain attending

milking at this stage prevents the removal of all the milk secreted, and from the teats ulcerating, and the ducts being obstructed, attacks of mammitis are very common. Milk from cows suffering from this disease usually contains much pus.

There are abundant facts to demonstrate the injurious influence of such milk on human beings or animals drinking it. From my personal observations, I can state that calves die from acute laryngo-pharyngitis, and intestinal irritation, with marked emaciation. Pigs are readily affected, manifesting similar symptoms.

An exhaustive summary of the information published on the poisonous nature of milk in epizootic aphtha is furnished in an inaugural dissertation by Dr. Nauhiemer, (Giessen, 1860.) Sagar observed, during an attack of the disease in Moravia, (1764,) that the milk of cows induced the malady in man and animals. Similar observations were made in the vicinity of Lyons in 1811. Toggia's observations in Italy in 1818, and Mathieu's in France, led them to regard the product as innocuous. Jacob mentions a number of cases in which persons drinking largely of milk suffered severely when the malady was in the vicinity of Bâle in 1839. Jacob himself drank two large tumblers of warm milk from a cow that had sore teats and feet for five days. The following two days he took one tumbler each day, and this was immediately followed by headache, weakness in the limbs, and feverish symptoms. The mouth was hot, and there was itchiness of the skin in various parts. The symptoms lasted two days. He again drank of such milk for two days, and suffered from painful swelling of the mouth, vesicular eruption within it, as well as on the chest. The vesicles on the latter were hard and irritable. Those in the mouth broke, the epithelium fell off, and the parts healed. All symptoms disappeared in eight or ten days. Jacob saw similar attacks in a number of persons, but the severity depended on the intensity of the attack in the cows. Hertwig and two friends drank a quart of fresh milk from an affected cow. On the second day fever, tremors, headache, hot and dry mouth, and itchiness in the hands and fingers, supervened. By the fifth day the mouth became swollen, vesicles formed within it, and gave great inconvenience. Similar eruptions occurred in the hands and fingers, and symptoms disappeared on the tenth day. Lowak (1845) has recorded similar results from the use of such milk.

I shall not detain you by observations of Herberger, Hering, Falke, Krügelstein, Donné, Spinola, and others, and I may draw from my own and recorded experience the following conclusions:

1stly, That epizootic aphtha—a disease scarcely ever out of Britain since 1839—is due to the development of a specific poison capable of inducing the symptoms of the disease in man, and apparently in all warm-blooded animals.

2ndly, From the frequent deaths in calves and young pigs, I am led to the conclusion that the young are more liable to suffer severely, and it is only in early age that there is danger to life.

3rdly, The human subject is preserved from attacks of this con-

tagious aphtha from the milk being taken some time after it is drawn, and in small quantities; occasionally, when it is boiled; and almost invariably, diluted. If the milk is swallowed pure and fresh, it communicates the disease, which is entirely similar in man and animals. The similarity extends even to the implication of the extremities, as shown by the eruption of the hands and fingers in man, as on the feet of animals.

I think it is desirable that attention be paid to this disorder by medical men. I am inclined to attribute the poisonous nature of the milk entirely to the admixture of the virus from the vesicles on the teats with the milk when drawn. The period of incubation of the disease is very short, and dairies might easily be kept clear, if it were insisted that newly bought animals should be kept separate for three or four days, that they should always be milked last, and the hands of the person who milks washed immediately after; chlorine water should be applied to the teats, and especially to the vesicles when opened. There is no doubt a remarkable scarcity of general facts indicating the dangerous nature of this milk, but perhaps this may be due to the fact that infants suffer, and any ill effects may be attributed to ordinary eruptions so commonly seen during the period of suckling.

Valorius Fever Poison.—No fact is better known than that man is attacked with symptoms of cow-pox from contact with the poison of this disease, but there is no danger to be apprehended—rather the reverse.

The flesh of sheep that have died of small-pox, though seriously deteriorated, is not poisonous. Its sale is condemned by Delafond, as any such trade favors the extension of disease.—*Amer. Med. Monthly.*

[From the American Medical Times.]

Foreign Correspondence. By Professor Charles A. Lee.

Colony of Fitz-James.

Clermont, Department of Oise, France,
August 21, 1862.

This beautiful village is situated some fifty miles north of Paris, in the Department of Oise, in one of the finest and most productive agricultural regions of France. It is now in the midst of the wheat harvest, and more than one-half of the whole territory between this and Paris is covered with one of the heaviest crops of this cereal ever known in the kingdom. It is also a very fruitful wine-growing region, some of the finest champagne being produced in this vicinity.

My object in visiting this place has been to examine the private insane asylum of the brothers Labitte, and the famous "Colony of Fitz-James" connected with it. The private asylum was founded some thirty years ago, by the father of the present proprietors, but the "Colony" dates only from the year 1847. As it is the only institution of the kind in France, and established, as it seems

to me, on a correct principle, namely, that employment, and especially *agricultural labor*, is not only one of the most successful modes of treatment of the insane, but also the most advantageous in an economical point of view, I trust that some account of the establishment may prove acceptable to your readers. In the year above named, the institution was organized by one of the brothers taking the general charge or superintendence; another took charge of the agricultural department; a third of the medical treatment of the males; while Dr. Woillez attended to the medical management of the females. This arrangement continued until 1850, when Dr. Gustavus Labitte assumed the entire management, aided by Dr. Pain, an adjunct physician, two internes, or house-physicians, and an apothecary. At first, about ninety acres of land were cultivated in the immediate neighborhood of the asylum, on the border of the village. They soon, however, perceived that it would be more advantageous to have the farm at a greater distance from the asylum, so that the laboring class of patients would have no intercourse with the others, and their employment be better regulated.

To carry out this plan another large farm, of nearly five hundred acres, was purchased, about three-quarters of a mile from the village, but adjoining that already under cultivation; pleasantly located, perfectly healthy, and easy of access. To this farm forty strong and quiet male patients were removed, and this may be said to have been the commencement of the colony. The results of this experiment far exceeded the expectations of the proprietors, and very soon other buildings were found necessary to accommodate the increasing number of inmates. Improvements and additions have from time to time been made, till now a most complete and extensive establishment has been created, the entire means having been derived from the profits of the system of organized labor. For the last four years, during which the system has been fully and completely carried out, the most remarkable success has been witnessed; in all curable cases the most prompt amelioration has been observed; those who appeared indocile, untractable, and unable to perform any serviceable labor, have been found perfectly manageable and docile, and their mental restoration kept pace with the improvement in their bodily health, proving that agricultural labor is the true Hygeian fount. Male patients are transferred from the asylum to the colony, according to their condition, and if necessary, they are retransferred to the asylum, an event which rarely happens. This employment in the open air, in such kind of agricultural labor as seems best suited to the general strength and adaptation of the patient, *solves at last the restraint* or *non-restraint problem*, and shows conclusively that if there is a proper channel in which muscular and nervous energy may be exerted (and this is found to be the true one), it will not break out into anomalous, irregular, and violent manifestations. This is the channel originally opened by Omnipotent Wisdom for the disordered race of fallen man. The idea of constraint and confinement does not even enter

the mind of these apparently happy and contented laborers. They mingle freely in each other's society, they enjoy the largest liberty, they talk, laugh, joke, in short, they act like other human beings, and as they would *not* act, if they were shut up in dark, padded rooms, confined by strait-jackets, strapped to their chairs, lashed to their beds, or held by their attendants. As I entered the main building, a smart rain drove a large number of the patients inside the walls for shelter, and I saw nothing in their looks or actions which distinguished them from the ordinary class of French peasants. They all had a cheerful, healthy look, and their conduct was every way proper. Who will not exclaim with me, as I left the place: Surely, every lunatic asylum should have its AGRICULTURAL COLONY? There may be difficulties in aristocratic communities, like those of England and our Southern States, where labor is deemed disgraceful, and idleness or amusements only honored; in such countries, where the wealthy madman is considered far better than the poor plebeian insane, and companionship with a humbler class something contaminating and degrading, we can hardly expect this system to be fully adopted, if attempted at all. Hence, in the private lunatic asylums of Great Britain we see nothing of the sort; the spade, the hoe and the shovel, the rake, the scythe, and the sickle, are strangers to such establishments; and if the camerrole, the handcuff, the strap, and the manacle are equally rare, there is the dark padded room, which restrains the whole body, if it leaves the hands and the legs free; and I have known patients in such establishments remain thus secluded and confined for days, months, and in one instance a year, without any human society whatever, who, I have no doubt, would have been speedily restored to health, mental and bodily, if subjected to the exercise, orderly discipline, and hygienic influence of systematized agricultural employment. And this is dignified by the appellation of the *no-restraint system.*

This "Colony of Fitz-James" is so called from a village of the same name, and is about a mile and three-quarters from Clermont, in the beautiful valley of the Breche, which is here from ten to fifteen miles wide. About thirty-five acres are surrounded by the river Beronnelle and a wall, so that if any of the patients had a desire to escape, which rarely if ever happens, it would be found somewhat difficult; the greater part of the farm, however, is without any inclosure. The colony is divided into four sections, each perfectly distinct from the other, and having its particular destination. The *first section,* that of direction or superintendence, is occupied by the dwellings of the director and male pay patients. The *second* is the *farm* proper, where the colonists reside. The *third,* that of the *small chateau,* is devoted to the female pay patients; while the *fourth,* the section of *Becrel,* is occupied by the females employed in washing, and laundry. The total number of patients belonging to all the sections is 306. The *first section,* as I have stated, that of *direction,* comprises a dwelling of two stories, occupied by the director and the pay patients, and commands

a view, on one side of the farm and its dependencies, situated at the extremity of an extensive lawn, traversed by the river Beronnelle, near the village of Clermont and the valley of the Breche. On the opposite side, adjoining the meadow, is the *Becrel section* and the village of Fitz-James. The part of the dwelling devoted to the boarders, consists of a basement divided into billiard, sitting, and dining rooms, apartments for the overseer or superintendent, a saloon, which serves as a parlor, etc. On the second floor are twenty rooms for males. The patients who occupy this section are tranquil incurables and convalescents.

2. The *Second Section* comprises the farm-buildings and the dwellings of the colonists. The latter is entirely separated from the farms, and has a view on one side of the village of Clermont, the section of superintendence, and the valley of the Breche; and on the other, of the cultivated fields belonging to the farms. The ground floor is occupied by ample apartments for the physician, the kitchen and day-rooms; the second and third stories are divided into five extensive dormitories. This building has a spacious court, planted with trees and flowers, with a grass-plot in the center. The farm buildings cover about five acres. There are extensive stables, in which I counted near thirty white farm horses of the large Boulognais breed; a large barn containing threshing and other agricultural machines, a mill for grinding wheat, etc., all operated by steam power; extensive and well-arranged buildings for cattle, sheep, and swine, of which large numbers of the best breeds are always kept. For example, I counted forty-two very large and beautiful cows, a cross between the Durham and Flemish, famous for dairy purposes; about one hundred swine of the Berkshire and Suffolk breed, some from the late Prince Consort's model farm at Windsor, many of which had taken the first premium at different agricultural fairs in France. There are also well-constructed abattoirs or slaughter-houses, in which I noticed two slaughtered fat oxen, six sheep, and two calves, which I was told was the daily allowance for the inhabitants of the asylum and colony. In the winter, swine are substituted for calves. These, with the extensive sheds for carriages, carts, agricultural instruments, tools, etc., make up the principal buildings. A Swiss cottage on the Beronnelle creek contains a hydraulic dam which distributes water over the farm for purposes of irrigation, and also carries a mill for making cider; near the engine-room are two extensive and well-arranged bathing-rooms, with every convenience found in such establishments. I also visited wine and cider vaults, containing immense pipes, each holding many hogsheads of cider made on the premises. A liberal allowance of both these beverages, Dr. A. Labitte informed me, was allowed to the patients.

The section of the *Small Chateau*, appropriated to female pay patients, is a country house situated at the extremity of the inclosure of the Colony bordering on the village of Fitz-James, and separated from the farm meadows by the small river Beronnelle. It commands a distant view of the farm, and the section of the

superintendent. This section occupies about fifteen acres, which are appropriated to a lawn and park. The main building consists of a ground floor, containing a dining hall, a saloon, and three rooms for the overseer; while the second floor is divided into five apartments. Adjoining this building is a wing containing the kitchen, bathing-rooms, wood-house, etc. The *Section Becrel* is also situated at the extremity of the inclosure of the colony, and commands a view of the section of the *Small Chateau*, the farm, and the sides of the valley of the Breche. It is now occupied by one hundred and seven females, who are all occupied in laundry, both for the asylum and the colony. It comprises buildings for the patients and the laundry; the former consisting of a ground floor divided into apartments for the superintendent, a promenade, a refectory for eighty-seven indigent patients, a saloon and dining-rooms for twenty pay patients, and a second story divided into three dormitories. The buildings devoted to the laundry are opposite the first, and are composed on the ground floor of a folding clothes room, two rooms for depositing foul clothes, a bathing-room, a wash-room, etc. The wash-room is so constructed that a branch of the Beronnelle flows through it, thus constantly renewing the water in the reservoir, around which the washing is carried on, on the smooth slab inclining inwards, the females standing at their work. In drying, the clothes are first exposed to hot air, and afterwards to the open air. The buildings above named surround an open green-sodded court, planted with trees and flowers, and embracing two and a half acres.

In regard to the administrative and religious organization of the Colony, which is under the exclusive control of M. Auguste Labitte, it is of course dependent on that of the Clermont Asylum. M. Alexandre Labitte is the sub-director, having charge of the administrative service and the agricultural department. Under him is one responsible employé, a superintendent of the sections of the pay patients and the farm, a superintendent of the section of the Small Chateau, and one for that of Becrel; in short, all the personnel of the Colony, which is composed of thirty-two men and thirteen women, thus classified:—8 domestics for the service of the section of direction for the farm; 7 conductors of detachments; 4 gardeners or keepers; 7 carmen or drivers; 2 cowherds; 1 shepherd, 1 miller, 1 butcher, 1 chief mechanic, 1 cook.

For the Section of the Small Chateau, four domestics are employed; *for that of Becrel*, 3 guardians or keepers, and 5 superintendents of the workshops. The Curate of Fitz-James is the chaplain of the Colony. Both male and female patients attend religious service at the village church, there being no chapel connected with the establishment: a want which will doubtless be sooner or later supplied.

An internal, or house-physician, resides at the Colony, and sees to the carrying out the medical prescriptions. The physician-in-chief makes a visit of two hours in the middle of the day. He orders all the changes or transfers from the asylum at Clermont to

the Colony, and *vice versa;* he prescribes the kind of labor for each patient; in fine, the whole moral and disciplinary management of the entire Colony. As changes are constantly occurring in the mental condition and bodily health of the patients, so these transfers are correspondingly frequent, and the Colony is thus complementary to the asylum, whose inmates are always so numerous (now reaching over 1000) that those displacements can always be made without injury to the general organization. When a colonist is afflicted by a return of his disease, or an exacerbation, which requires special treatment and surveillance, he is immediately re-transferred to the asylum at Clermont. The Colony is thus only the rendezvous of the strong and docile, who quietly submit to the ordered regularity of the service.

The medical end in view is to surround the insane, as far as possible, with the customs and habits of social life; life in common, occupations always useful, liberty wisely restrained. All these circumstances must necessarily introduce among the colonists friendly and reciprocal relations, interest them in their labors, and inspire them with sentiments of personal consideration, which lead them to appreciate services of which they are capable, and banish from their minds every idea of seclusion and restraint. No physical restraints are permitted; every intractable patient is immediately sent back to the asylum; and this transfer is a punishment which they greatly dread, and of course seek to avoid.

Dawn of Animal Life.

A late number of the Westminster Review contains under this title a review of the recent researches by Greene, Claparede, Lachmann, Williamson, Carpenter, and Jukes, into the structure and development of the protozoa, and the astounding part which these little and otherwise insignificant animals appear to have played, in periods of inconceivable remoteness, as the engineers to whom was intrusted the construction of much of the crust of the globe which we inhabit. And even in the present day they are still at work, forming, at a depth of 2,000 fathoms, the bed of the ocean between Europe and North America, and by throwing up sand-banks, as they are termed, blocking up harbors, changing the course and depth of straits and channels, silently working out what may ultimately become a serious revolution in the apparent destiny of commercial emporia. Tracing the structure of these creatures from their most primitive form in the *Rhizopoda reticulata*, with its simple plastic body substance, or "sarcode," throwing out filaments, which it can again withdraw, and the shell bearing forms or foraminifera, "tens of thousands of which may be contained in a pill-box," while others, as the fossil nummulites, are two or three inches in diameter, through their several forms

and orders—the author passes to the consideration of that of the sponges. From this he passes on to the infusoria, the lowest animals provided with a mouth. Not only are these three groups of protozoa so connected by intermediate forms, as in structure and modes of reproduction insensibly to glide one into another, but it is pointed out that, among the foraminifera, so infinitely diversified are the individual forms that classification into distinct species is almost set at defiance, Dr. Williamson remarking that "examples abound which we are unable to locate with confidence, and we are at length tempted to believe that amongst the foraminifera specific distinctions have no existence. . . . Nearly every species is capable of adapting itself with endless modifications of form and structure to very different habitats, in brackish and in salt water, in the several zones of shallow and abyssal seas, and under every climate from the poles to the equator." And as these specific differences are so undefined among animals of this lowest type of animal life, so are naturalists still at loss to draw the line which shall mark off these from vegetable organisms—as much at a loss now, when research has been pushed so far on the confines of both kingdoms, as they were when rougher modes of investigation were alone had recourse to. An interesting illustration of the difficulty is met with in comparing the modes of reproduction of admitted animals and admitted vegetable growths. Thus, in the sponges, not only is there met with reproduction by gemmation, but in the Spongilla reproductive seed-like bodies have been discovered, and in the Tethya true germ-cells or ova and spermatozoa in every stage of development. On the other hand, in many cryptogamic plants, especially in the algæ, are there found zoospores or spermatozoids, which endowed with independent motion appear to perform an office identical with that of animal spermatozoa. In some algæ they thus enter a pistil-like organ, the sporangia, evidently for the purpose of fecundation. When, while swimming about, they approach the sporangia, they are said to make straight for it as though gifted with volition, and if they fail to enter it at once they repeat the effort. The general result of the inquiries of the naturalist mentioned, is not only to show the importance of the protozoa in the scheme of our mundane universe, but they bring out the interesting truth that there are animals constituted by an almost homogeneous gelatinous substance, in which this substance subserves all the purposes to which special structures are devoted in animals higher (as we term them) in the scale of organization, but while "higher," far less numerous, and apparently far less stupendous as to the work which they accomplish. In these lowest animals the same gelatinous material subserves at once the functions of nutrition, circulation, respiration, and generation. "In the absence of muscular fibres all the protozoa possess the power of extension and contractility; and, notwithstanding the absence of nervous fibres, they clearly evince in their actions the existence of sensation and volition, and appear susceptible of sensitive impressions. With the naked infusoria the sense of

touch exists, undoubtedly, over the whole body. But, besides this, it appears specially developed in many species in the long ciliæ, forming vibratile circles, or in those movable foot-like and snout-like prolongations of the body. In the same manner, it is probable that they have the sense of taste also; for they seem to exercise a choice in their food, although no gustatory organ has yet been found. All species, whether they have red pigment points or not, seem affected by light. Without doubt, therefore, their vision consists simply in discriminating light from darkness, which is accomplished by the general surface of the body, and without the aid of a special optical organ. . . . The way in which the Rhizopoda seize their prey certainly *seems* to indicate the presence of distinct volition; but it is probable that the phenomena observable are manifestations only of unconscious 'reflex action.'"—*Med. Times and Gaz.*, Aug. 2, 1862.

Inspection of Hospitals.

[From the Boston Medical and Surgical Journal.]

Mr. Editor,—Every thing pertaining to hospitals is now exciting much attention. The inspection of hospitals of the army, undertaken by the Sanitary Commission, is an admirable conception, and I doubt not will be productive of satisfactory results. Having given much attention to the subject in general, and thinking, some time since, that it was desirable we should have more particular information about certain hospitals, so as to make a more correct estimate of the causes of the greater mortality in one than in another, and to arrive at the most truly economic way of building and managing hospitals, I drew up a formula, or list of memoranda, comprising those things which I thought worthy and desirable of notice in describing any particular one. I here offer this to you for publication. As you see, it is made to embrace every department—topographical, constructional, &c., down to the economic and pecuniary. I do not suppose it is perfect, and should therefore like to have any suggestions of points that I have omitted.

TOPOGRAPHY.

Elevation—Relative to water surfaces; relative to surrounding country.

Character of surrounding country; of soil.

Proximity to Water—Sea, lake, or river; fresh or salt; tidal?—if so, surface laid bare at ebb—gravel or mud.

Amount of foliage or herbage in the neighborhood.

Any factories; tanneries; slaughter-houses; gas, chemical, or kerosene works?

What grounds are around the building for the use of the patients?

METEOROLOGICAL POINTS.

Temperature—Minimum; maximum; mean.
Hygrometry—Dry or moist.
Prevailing Winds—Cold or warm; dry or moist.
Is the building sheltered from them? By what? high land, foliage or houses?

CONSTRUCTION OF BUILDING.

General Shape and Arrangement—Square; oblong; hollow square; pavilion (how arranged).
Size; material; thickness of walls (solid or hollow); number of stories; cellarage; out-houses.
General Internal Plan—How divided; size of wards—height.
Do the wards run all across the building, so as to have sunlight on each side and through ventilation?
Interior Finish—Wood, bare or painted.
Plaster—smooth or rough finish, bare or painted; on the wall itself or on furring.
Floors—hard or soft wood, bare, painted, or covered.
How is the building heated?—Lighted (artificial light)?—Ventilated?—Drained?
Privies and Water-closets—On what plan? Where placed? Bedside conveniences for patients.
Supply of Water—Kind (limestone, river, well, &c.); hard; soft.
Number of Beds; material and kind of cot; material of mattrass
Any thing else of notice about beds or their arrangement; number of cubic feet to each.
Number of admissions; of beds on average full; of deaths; of discharges—relieved, cured.
Average stay of patient.
Any endemics; any epidemics.
Food—Kind; quantity (sufficient and obtained in good condition); how cooked.

FOUNDATION AND MEANS OF SUPPORT OF THE HOSPITAL.

Endowed—By Government; by private individuals; supported by subscription; by receipts from patients.

GOVERNMENT.

Governor or Trustees—How appointed.
Professional Force—Physicians; Surgeons; paid or unpaid. Steward; matron.
Nurses—male; female.
Laundresses; cooks and other helps.

EXPENDITURES.

Original Cost of Hospital—Ground; building; fittings.
Annual Cost—Physician and Surgeon. Steward and matron. Nurses and other helps.
Food; medicine; fuel; light; other expenses.
Cost of each patient per week—For food; for medicine.
Whole average cost of patient.

It is also desirable, if possible, that a ground plat of the house, grounds and surroundings, within a radius of an eighth of a mile, should be given. As a general thing, this can be done with little trouble, and sufficiently accurate for all useful purposes, after a little practice. The eye can measure distances nearly enough, or they can be paced off. It must not be forgotten to designate on this plat, the cardinal points—an important item, often omitted.

Wm. Ed. Coale, M.D.

4 Staniford St., Oct. 10th, 1862.

Clinical Lecture on Scirrous Cancer of the Breast. By James Paget, F. R. C. S.

The present lecture was devoted to the consideration of the reasons for operating in mammary cancer, and the grounds on which to select appropriate cases.

Mr. Paget remarked that some recommend operation in nearly every case, and some will operate in none. Both have some truth in their arguments, both have much that is good in their practice, but it is possible to obtain the good of both sides without adopting the too general rule of either. There can be no doubt that the greatest measure of good may be done by making a careful selection of cases fit for operation and rejecting all the rest.

It is necessary to consider first what are the objections to the operation, and to—

1. The excision of the breast. They are chiefly, and almost alone, that the patient may die in consequence of it. Mr. Paget believed that in any large number of cases, even of those selected with some care, it may be feared that one patient in every ten will thus die, of pyæmia, or erysipelas, or tetanus, or secondary hemorrhage, or some calamity following the operation. And this must be no trivial consideration, for in every such case the operation destroys in a week or two a life which, but for it, might have lasted as many years.

Nor, according to some is this all: for it is said that when the disease returns after operation it makes so much more rapid progress than if it had been left alone, that the operation shortens the lives of even those whom it does not kill outright. It cannot, perhaps, be denied that this may be true of some cases in the selection of which no judgment is exercised; but, on the whole, taking the results of some hundreds of cases, it is certain that the average duration of life in those operated on is not less than in those in whom the disease runs its course: rather, in well selected cases it will be found always greater. In a recent tabulation of hospital and private cases, 85 cases operated on lived an average of 55·6 months, and 62 cases not operated on lived an average of 43 months. And some such proportion as this will probably be always found.

It has been objected, too, that the recurrent disease, even if not more rapidly fatal than the uninterrupted disease would be, is more painful. But this is certainly not generally true. In very many cases—in the large majority—the recurrent disease is much less severe than the continued disease would, in the same time, have become; it is only in a very few that we can fairly expect it to be worse. It can scarcely be urged that the pain of the operation or of its consequences is an objection; for, with chloroform, the pain of the one is null, and, with simple dressing, that of the other is really trivial. It may, therefore, be safely held, that the only material objection (but it is a very serious one) to the operation is, that a patient runs a risk of one in ten of dying from it; in other words, it is only about nine to one that she will recover from the effects of the operation.

What, then, does the operation offer that can make it advisable for a patient to incur this risk of dying? Does it offer to any one a reasonable hope of an indefinite prolongation of life, and freedom from the same disease? No; the recurrence of cancer of the breast after operation may be held to be as certain as any thing in surgery. The question is thus narrowed; we must in every case expect the recurrence of disease; and this is likely to occur at such a time after the operation that, speaking generally, and on the average, the patient will not rarely die of cancer nearly as soon after the operation as if the disease had been left to its own course.

Can it, therefore, be reasonable to submit a patient to the risk of dying within a month, perhaps in a week, for the sake of that interval of health which will or may exist between the operation and the recurrence of the disease, and for a good probability of adding a year to life, and of having a less severe disease? The answer must depend, chiefly, on the probable length of this interval before the recurrence. The average is little more than thirteen months; more than one half return within twelve months; about two-fifths return within six months. Is this average worth the average risk of life? Consider, when no operation is performed, the pain and anxiety—the pain likely to increase daily—the misery of waking every day to the consciousness of an incurable disease; the sometimes loathsomeness; the restlessness for cure; —cure, such as there are never wanting dishonest men to promise. The average expectation of such relief seems worth the average risk, but not more. Look well, therefore, to the general condition of patients before deciding.

The average interval between the operation and the return of disease is, as has been said, about thirteen to fourteen months; but the extremes, between which the average is drawn, are very wide apart. In some cases the return may be within three months; in some not for ten, twelve, or more years.

It is, therefore, of great importance to be able to decide in what cases the risk of life is greater, and in what the probability of speedy return of the disease is greater, than the average.

For the first, there are no other rules for cancer than for other

cases requiring large operations. These are some of the "doubly hazardous:" The old, after 60; the very large-breasted; the fat and plethoric; the cachectic; the overfed on animal food; the drunkards; the gouty; the habitually bronchitic; the albuminurious; the very dejected, not merely timid; and, in short, those with any organic disease of internal organs; and, after middle age, these increase very much in their proportion.

And for the probabilities of rapid recurrence, these are "bad cases:" Acute cancers, *i.e.*, all that have been rapid in progress; for those which increase very quickly before the operation, are certain to recur quickly after it. This, however, may be no sufficient objection, for great pain may often be saved by its performance. Mr. Paget said that he remembered such a case in a lady, whose breast he removed when she was five months advanced in pregnancy. She recovered well from the operation, and the benefit procured by its performance was very great; she went to her full term, bore her child, and was able to suckle it for a year before she died, with her most anxious wish fulfilled in comparative comfort.

Another condition unfavorable to operation is a brawny skin with firm œdema and wide open hair-follicles, or wide adhesion of skin; so is that in which the skin is extensively cancerous, or where there are little scattered tubercles of cancer in the glands and skin; or where there is considerable affection of the lymph-glands in the axilla, especially *numerous* diseased glands. A moderate amount, however, of lymphatic disease is no serious obstacle to an operation. But supra-clavicular disease should be an almost absolute bar against it.

Mr. Paget here adverted to the best manner of detecting cancerous lymphatic disease in this situation, and said that in cases where it is impossible to make out satisfactorily, by touch, the presence of enlarged glands, a difference of outline may be often seen by bringing the eyes to the same level with the part, and comparing the two sides; an uplifting of the integuments being often caused by the presence of swollen glands too deep or small to be felt.

Cases in which cancer attacks the upper half of the breast are generally bad; and those in which the lower part of the gland is affected are among the best. Cancer simultaneously affecting both breasts, is seldom or never to be operated on, for the risk is greater, and the advantage not greater.

There are, again, certain cases in which an operation is needless: such are the very chronic—where the breast is small, shriveled, knotty, and sunk down on the pectoral muscle. Patients with disease of this kind will live many years, probably, with no increase of trouble, and with but little inconvenience.

Mr. Paget concluded this part of the subject by summing up the advantages on each side, and said that the statements which he had made were taken from general averages, and that from such alone could any general conclusions be drawn. To deal with single cases is but a sort of surgical gambling. One man may tell

of a case where no operation was performed, and the patient lived for twenty years; and another will tell of a life prolonged for almost the same time after operation; each statement quite true, but neither of them of any useful application. To reckon from such cases is mere gambling; and, as in gambling of other kinds, the best luck at first brings the worst grief at last.

In a second lecture on this subject, Mr. Paget proceeded to consider the treatment of cancer of the breast with caustics. This method of extirpation may be regarded as supplemental to excision. There is at the present time a patient in Sitwell Ward who is being treated in this way, and whose case gave occasion to these and the foregoing remarks. To state what may be a guide to the choice of cases for employing this rather than excision:—the objection to cutting is the risk to life. This risk is with caustics less. It is often said to be none, but this is an error. Death sometimes happens not by pyæmia or any such malady, but through severity of suffering, hemorrhage, too great exhaustion, etc. Mr. Paget said he had known three cases in one special practitioners's hands, of death in a month or little more from the commencement, and through the effects, of this treatment. But say the risk to life is only half that of cutting; why not, for this advantage, always choose caustics? These are the objections: The treatment is fearfully painful. The means of alleviation are very insufficient. It may be mitigated, indeed, by opiates or injection of morphia beneath the skin, but not materially. In neuralgic patients, especially, the pain is utterly intolerable; but cutting not more dangerous than in the average. A second objection is the danger of incompleteness, through loss of health, or local inflammation, making the rate of progress of the cancer greater than that of the destruction by the caustic, or through leaving an open, inflamed, and, consequently, worse form of cancer.

There is the danger, also, of irritating the lymph-glands, and so making them more liable to be affected by cancer; and there is the danger of very rapid return even after complete removal of the primary tumor. It has, indeed, been said by those who pretend to cure cancer thoroughly by this method, that no recurrence takes place; than which nothing can be more false. There are no reliable statistics to decide the rate of return, but it is certainly not less, and is, probably, more rapid than that after excision; from some of the gland, in which the disease will most probably return, being left—and left not uninjured after the inflammation, etc., which has been set up in the neighboring tissues.

These are, altogether, such serious objections, that caustics are very rarely to be preferred to excision, except in some of those cases in which, as enumerated in the last lecture, excision would be attended with much more than the average risk of life; for the constitutional maladies which greatly increase the risk of cutting do not, except very rarely, increase the risk of caustics. Many local conditions forbid the use of caustics—as a very large cancer, a decidedly acute one—(for this will almost certainly run ahead),

a very widely-affected skin, general œdema of skin, scattered tubercles, nearly all degrees of disease of glands, all supra-clavicular disease, wide-spread ulceration, etc. But these are left as more fit for caustics than for cutting—many of the small cancers, especially in the unhealthy or diseased, many of the recurrent, the exuberant, some of the ulcerated, some of the adherent.

In conclusion, Mr. Paget said he believed, that by selecting with care, on the one hand, cases for excision, refusing those in which the operation would be attended with more than a proper share of danger; and, on the other, by using caustics where, from their smaller risk, etc., they would be more appropriate, the life of a large number of those who suffer from cancer may be considerably prolonged, and more even than any present statistics would show. —*Med. Times and Gaz.*, Sept. 27th, 1862.

We quote from the *American Medical Times*, of August 9th, the following letter from Dr. Sayre:

Sir—I have for many years past been in the habit of using picked oakum, in all cases of suppurating wounds, particularly in connection with opened joints, where the suppuration is excessive. The great number of gunshot wounds now in Bellevue Hospital, where I use it entirely to the exclusion of lint, has furnished an opportunity for a number of army surgeons to examine its advantages, and they have requested me to make the subject more generally known to the profession through the medium of your valuable medical journal.

One of the objects of lint applied to a suppurating wound is to absorb the discharge; now, as most of the lint is composed either entirely or in great part of cotton, it acts more like a tampon, or a retainer of the secretions, than as an absorber.

If you will take a bale of cotton and immerse it in the river for one month, or even longer, and then remove it, you will find on opening it that the cotton in the centre of the bale is perfectly dry, thus proving that it cannot be soaked through any great thickness, or that it will not absorb moisture. So, when placed over a suppurating wound and left for some hours, it will be found perfectly dry except at the point of contact: acting, in fact, like a bung in a barrel or a cork in a bottle—to *prevent* the escape of the pus—which necessarily burrows in different directions, thus forming extensive abscesses, and adding greatly to the danger of the patient; and when removed, the pus will gush out in large quantities. Now, if you place picked oakum over these same wounds, you will find, after the same number of hours, that the oakum is perfectly saturated with pus, and the wound itself almost perfectly dry and clean —the oakum acting like a siphon, and discharging the contents of the abscess by capillary attraction.

It is necessary to place under the wound a piece of India-rubber cloth, or oiled muslin, for the sake of cleanliness; and in case of much inflammation, by simply wetting the oakum in cold water, and wrapping the oiled muslin around the limb, or wounded part, so as to exclude the air, you have at once the neatest and most comfortable poultice that can be applied to it. In gunshot wounds, which go through and through a limb, particularly if made with the "Minié ball," the whirl or screw of the ball entangles in its thread the muscular fibres and cellular tissue, and separates them from their attachments for a long distance from the real track of the ball itself.

As the muscle and tegumentary tissues are more freely supplied with blood-vessels than the fat and cellular tissue, the consequence is that they begin to granulate much more readily than those other tissues, and will thus often close up the wound, and prevent the free escape of pus, before those parts have perfectly healed, and thus lead to the formation of extensive secondary abscesses. I, therefore, in all cases where no blood-vessels prevent it, pass an eyed probe through the wound and draw through it a few fibres of the oakum or tarred rope, which keeps it perfectly free, and the tar is a very excellent antiseptic, and removes all unpleasant odor.

A few fresh fibres are twisted on the end of the seton at every dressing and drawn into the wound, and the soiled piece cut off and removed with the dressings.

Another great advantage which the oakum possesses over lint, which in these times of heavy taxation is not to be overlooked, is its cheapness. Lint at the present time costs from $1.25 to $1.35 per pound, whereas the finest picked oakum can be obtained at the "Empire Oakum Works," No. 149 West 39th street, for ten cents per pound. And if it were universally adopted in the army it would save many thousands of dollars to the Government, and I confidently believe the life of many a soldier. And no surgeon who has once used it will ever resort to lint again, particularly if the lint is made of cotton.

Clinical Remarks on a Case of Temporary Paralysis of the Accommodation of the Eye.—W. R——, aged 11 years, a delicate, pale, but bright and intelligent-looking lad, was brought by his father to the hospital on August 29th, on account of what appeared to be a great and sudden impairment of the vision of both eyes. His history was, that up to a fortnight ago he had always had good sight, and could read and write with perfect ease. Six weeks ago he had a low fever, from which he made a fair recovery, but was considerably reduced by it. One day, shortly after his illness, he discovered, on attempting to read, that he was unable to do so, but that he was able to distinguish objects at a distance. Examined with Jaeger's test-types, he could only read No. 16, or

two-line great primer type; but he could with facility tell the hour of the clock at a distance of twenty-six feet. When reading No. 16, his near point was fifteen inches. With a twenty-four inch focus convex glass he could read at "a foot" No. 12 of Jaeger's test-type; eighteen inch ditto, No. 8 test-type; twelve inch ditto, No. 4 test-type; nine inch ditto, No. 1 test-type. At Dr. Bader's suggestion he was made to look at distant objects—large type, No. 20, placed at a distance of twenty feet, through a bi-concave lens, so as to ascertain what amount of concavity the accommodative power of his eyes was able to overcome. Good ordinary eyes can, with an effort, see distant objects, although diminished in size, through a bi-concave glass of six, five, or even of four inches and a half focus. The object at first is scarcely seen through such a lens, but by a strain of the accommodative powers it soon becomes just visible, and at last perfectly clear. This lad was only able to overcome a thirty inch concave lens, showing how little, if any, accommodative power he possessed. He was treated with purgatives, iron, good diet, and perfect rest to the eyes, with occasional cold sponging to them. He rapidly improved, and on September 19th he was able to read No. 1 perfectly with either eye, and could see as well as ever he did.

The following clinical remarks were made by Mr. Lawson: "In *The Lancet* of May 11th, 1861, I published, with some remarks, four cases similar to the above, under the heading of 'Temporary Paralysis of the Ciliary Muscle,' and showed that this peculiar affection would manifest itself after various illnesses. That it occurs more frequently after diphtheria I am willing to believe, as from the reports of those who have had many cases of diphtheria under their care, a temporary loss of, or great impairment in, the accommodating power of the eyes is not a very unfrequent result. But any debilitating illness seems to have a similar effect. This affection is not limited to children, although they much more frequently suffer than adults; for one of the cases I first recorded was in an officer, twenty-six years of age, who had suffered severely from fever. The prognosis, I think, may be favorable; for although I have not met with more than six or eight cases, yet under proper treatment they have all speedily recovered."—*Lancet*, Oct. 4, 1862.

Belladonna in Epilepsy.—At the Hospital for the Epileptic and Paralyzed, belladonna and its alkaloid, atropia, are still in favor as remedies for epilepsy. Under these remedies most patients with epilepsy, especially if they suffer much between the paroxysms, are benefited.

In treating epilepsy we must remember that, although in many cases we may not be able to cure, we can very often diminish the number of fits; and even if we cannot do that, the patient's general condition is often much improved. Many patients attend the

hospital who have had fits for very many years, and though they have no hope of being cured, they, nevertheless, experience great benefit, and are rendered capable of resuming a comparatively active life. Although this is not a cure, it is the next best thing to it.

The prescription generally used is—Extract of belladonna a quarter of a grain, quinia one grain, in a pill three times a day. Of atropine, one $\frac{1}{120}$th of a grain is given three times a day. Of both, the dose is gradually increased. Although given in increased doses, they are rarely observed to produce, in epilepsy, much physiological effect. Sometimes, however, the patients complain of dryness in the throat, and of defective sight. We think it will be noticed that patients with dark eyes suffer more from it, and that these patients are often hypermetropic.

When the sight is affected by belladonna or atropine, it is because the ciliary muscle is paralyzed partially or totally, and hence that the power of accommodation is impaired, or altogether lost. It is not likely that it is due to dilatation of the pupil, as in congenital irideremia the accommodation is good, and in a case recorded by Graefe, in which the whole of the iris was removed by operation, it remained perfect. It was lost, however, when atropine was put into the eye.

Patients, of course, complain a good deal when their sight is impaired, however little, by any course of treatment, but they can be assured that the defect is only temporary. In some cases of cataract belladonna has been used for years without injury to the eyes, and without losing its powers.

In no case have we noticed dullness of hearing to be produced by this drug. Very likely there may be some slight impairment of hearing which the patient does not notice. Very often there is tinnitus aurium, and some little defect of hearing attending it, but this is common in epilepsy, whether belladonna be given or not. We have not noticed that patients have complained of increase of deafness under its use. If a solution of atropine were dropped into the ear it might then paralyze the small muscles of the ear, and produce defective accommodation for sound, if such a phrase is allowable.

Another method in which Dr. Brown-Séquard uses atropine in epilepsy, is to inject a solution of it and morphia into the part from which an aura starts. This was done in several cases with excellent results. A solution containing one-sixtieth of a grain of atropine and a quarter of a grain of morphia is injected with Wood's syringe. In the several cases in which it was used it did not produce any immediate effect in the patients, and no giddiness, etc. The operation is not painful.

It is supposed that belladonna acts on the blood-vessels, producing contraction. Ergot, also, Dr. Brown-Séquard believes, has this property; and hence their use in local inflammatory conditions of the brain or spinal cord. Ergot, he believes, has a greater action on the vessels of the spinal cord, and belladonna on those of the

brain. In paraplegia from myelitis, a pill containing three grains of fresh ergot and a quarter of a grain of the extract of belladonna is given three times a day. The action of belladonna in arresting the flow of milk, and in causing dryness of the throat, may be explained also on the hypothesis of its diminishing the supply of blood to those parts.—*Med. Times and Gaz.*, Oct. 11, 1862.

Health of the British Army and Navy compared Together.

Dr. Milroy read a paper on this subject before the Social Science Congress at its recent meeting. It contained the following startling facts in reference to the two services: In the army, in 1859, in the United Kingdom, the annual death-rate was 8.4 in 1000; in the Mediterranean it was 13; in the West Indies, 17; in the Australian colonies, 10; and in Ceylon and China, 47.1. The death-rate in the navy was as follows for the year 1858: On the home station, 9.6; Mediterranean, 11.1; West Indian, 20.8; Australian, 7.9; and East Indian and China, 62.5. The daily sick-rate in the army was as follows: United Kingdom, 50 in 1000; Mediterranean, 48; West Indias, 53.5; Australian colonies, 27; Ceylon and China, 99.5. The daily sick-rate in the navy was: Home station, 53.5; Mediterranean, 48.7; West Indian, 66.6; Australian colonies, 42; and East Indies and China, 92.

A discussion ensued upon this paper in which Mr. J. N. Redcliffe said it was worthy of notice that Lord Clarence Paget in moving the navy estimates, had stated that a large amount of the mortality and sickness in ships was believed to be traceable to the want of proper ventilation between decks; but was not aware that the ventilation of iron-plated ships had been brought under the notice of the parliament committee which had been appointed to consider the subject. The iron-plating of ships shut out the means of ventilation, and the temperature between the decks of the *Warrior* was much higher than in any of the other war ships of the navy now in use. He understood that the Government had directed that seventy tons of solid brick-work should be placed on the bottom of the ship to keep out the bilge-water, but whether or not it was to be cemented he did not know. At the same time he must say that, when this brick work should become impregnated with bilge-water, the evils would be greatly aggravated. Therefore, what the condition of the iron-plated ships now building would be could be readily conceived, and he thought it was urgently required that the attention of the Government should be drawn to the ventilation of the *Warrior*, *Black Prince*, *Defence*, and the other iron-plated ships now building, or the mortality might prove much greater than it was at the present time.—*Dublin Medical Journal*, June 25, 1862.

The New Use for Tobacco.

From the American Medical Times.

SIR:—In the communication in a recent issue, under the signature of CYGNET, I find some remarks upon the subject of tobacco which invite comment. M. Demeaux, a physician of reliability, thinks he has discovered a new use for this drug, and with the true spirit of a philanthropist promulgates his views to the world. But for this he is ridiculed by his brother savans, who only show their prejudices against the employment of the weed by the short-sighted objections which they raise against it. Now, if M. Demeaux be not mistaken in regard to the antiphrodisiac properties of tobacco, a great amount of good can be done to the countless victims of masturbation. And pray, why are not his observations entitled to respect? Why should the door be closed against all further discussion and investigation into this subject, simply because Rayer, Flourens, Velpeau or Dumas hold to different opinions. The most amusing argument against Demeaux's belief is that offered by Dumas. He says: "Why attribute the improvement in humanity to tobacco, rather than to sugar, meats, or wines, the consumption of which has augmented quite as largely as that of tobacco? "We would ask, what analogy do any of these articles, in their effects, bear to tobacco? It is too well known that tobacco acts almost wholly upon the nervous system, and that, in those accustomed to its moderate use, the first effect is decidedly sedative. Now, none of the other articles, except wine, have any direct action upon the nervous system, and that is generally conceded to be a stimulant to venery. Theory would seem to bear out Demeaux's statement. Those of an excitable nervous system, and who are most generally addicted to masturbation, require something to properly balance their nervous forces, and we have a right to expect that tobacco has, in its soothing, sedative and stimulating effect, a tendency to do this. One vice, it is true, will be substituted for another, but which one is the greatest? We see it advised that one preventive against masturbation is a constant occupation of the mind. Our schoolboys and students must have some leisure time, which must be occupied in some way or another. Smoking is a habit which most desire to enjoy, and in order to get the full benefits of its effects they are content for the time being to do nothing else. The vacuum which craves for some sort of gratification of appetite is thus filled to satisfaction. I wish not to be understood as advocating the indiscriminate use of tobacco, because all of our young men are not addicted to onanism; but I am in favor, on theoretical grounds, of inviting on behalf of M. Demeaux, a fair trial of it in the cases for which he recommends it. It would be an interesting fact to establish in reference to this question, whether masturbation prevails less than formerly among the females—if so, it would certainly be an argument against the use of

tobacco as a remedy. CYGNET, alluding to the fact that Demeaux's views have been treated with significant apathy by his colleagues, says: "I should array my pen against such insult, did M. Demeaux only explain *how* the smoking of tobacco cures onanism. He describes a remedy, tells the benign result, but makes no allusion to the *modus operandi* whereby the result arrives." Now, I would ask if CYGNET, in his practice, only prescribes those remedies whose method of action he can explain. If so, the domain of his therapeutics must be as cramped as his logic. Take for example, opium —does CYGNET doubt the effect of a dose of this drug—but will he attempt to explain to the satisfaction of all, why the narcotic effect is produced? The suggestion of M. Demeaux, in my opinion, is entitled to respect, if for no other reason than that he has shown a disposition to investigate a question in therapeutics, which, so far as I know to the contrary, is an entirely new one. He has commenced his investigation in a truly legitimate way by a study of statistics, and we have no right to deny the truth of his statments until we have lookd into the matter a little more fully. The science of medicine is a progressive one, improvements must necessarily be made in every department, and who can now pretend to say that tobacco may not be almost as effectual a remedy for masturbation as chloroform has proved itself to be for pain, quinine for ague, or mercury for syphilis. It strikes me that this is a subject worthy of the investigation of our army surgeons.

Yours, ect.,

RECTUS.

NEW YORK, Sept 28, 1862.

DEATH CAUSED BY CATERPILLARS.—A most singular case, perhaps the only one on record, of death caused by caterpillars occurred recently in the commune of Dardilly, near Lyons. A little boy, not more than eight years old had gone into a neighboring wood, in quest of birds' nests. Perceiving one on the top of a tree, he climbed up, but in so doing shook down an immense number of caterpillars, many of which fell on his shirt, his only upper garment, and soon covered his breast, which was bare, and penetrated to his arms and shoulders. For a few minutes the child took no notice of this, but he soon felt such an itching sensation that he was compelled to get down again and run home for assistance. Upon examination, his skin appeared covered with large red spots, which were soon followed by a general swelling, then by fever, somnolency, and delirium; and, notwithstanding all medical care, death ensued in the course of a few hours. The kind of caterpillar which caused this disaster was the *Bombyx processionea* of Reaumer, a very venomous species. Botanists know that if a nest of these insects be touched, or only stirred up with a stick, the person so doing, and remaining for some time near the spot, with-

in reach of the eminations arising therefrom, will be attacked with a papulous eruption of a more or less confluent nature, which will last several days, and be attended with violent itching. Dr. Calmell, Physician to the Hospital of Charenton, had preserved a nest of these caterpillars in a large glass phial, which was not opened for upwards of ten years. At length, the phial being accidentally wanted, it was opened in the presence of several persons, who all caught the eruption. This strange property has even suggested to several members of the Faculty the idea of using these caterpillars in cases in which it is required to subject the skin to a strong and permanent irritation. We may remark, in conclusion, that the number of caterpillars which infest the trees this year all over France is quite unprecedented—a circumstance which has called the attention of the authorities and of various learned societies to the question of protecting insectivorous birds, the only really efficacious enemies of the caterpillar.—*Amer. Med. Monthly.*

Disregard by Military Commanders of the Counsels of Medical Men on Sanitary Matters.—Sir Ranald Martin, in his late work on *Tropical Climates*, makes the following statements:

"When very young, and serving in one of the most pestilential countries known in India, I made a topographic examination of the localities, and reported the result to my commanding officer, suggesting at the same time what I regarded as the most suitable arrangement for encamping the men against the coming rainy season, when it was well known that a great increase of deadly fever would result. The answer was, 'I'll be —— if I do.' Now, here was no blundering lieutenant, but, on the contrary, one of the most able and well-informed field-officers I have ever known; yet, such was his treatment of a grave matter of duty, and the neglect of which, before the year was over, cost him his life. Again, on landing at Rangoon, during the first Burmese war, I was credibly informed that the superintending surgeon of the Bengal division there had warned the officer commanding that, without fresh animal food and vegetables, the European soldiers must perish from scurvey. The answer was characteristic, and somewhat more civil than that granted to me. It was this: "Medical opinions are very good, sir—when they are called for.' "—*Ed. Med. Jour.*, August, 1862.

Vaccination in England.—The number of persons vaccinated last year in England was 432,806, of which 425,739 were successful, and of this number 100,641 were above a year old. The number of registered births in the unions making these returns was 685,646, more than double the number of infants vaccinated by the public vaccinator. The number of the vaccinators was 3731.

Bibliographical Notices and Reviews.

The Pathology and Treatment of Venereal Diseases; including the Results of Recent Investigations on the Subject. By FREEMAN J. BUMSTEAD, M.D. With Illustrations on Wood. 8vo., pp. 686. Philadelphia: Blanchard & Lea, 1861. (Sold by J. H. Riley, Bookseller, Columbus, Ohio. Second notice, continued from page 349, July No.)

Having in a previous number spoken in a general way of the many excellencies of this book, and given somewhat at length the author's views and treatment of Gonorrhœa, we come now to speak of what constitutes its strong claims on the profession—we mean the clear, logical, and scientific manner in which he has elucidated the subject of Syphilis. This constitutes the second part of the work.

In endeavoring to present an abstract of the views and principles here advanced, we can only hope to be partially successful; and have been induced to make the attempt only with the hope that by directing attention to the work, we may be instrumental in extending its circulation, and thus aid in disseminating sound pathological and practical doctrine. Of course we shall be compelled to make lengthy extracts.

Dr. Bumstead commences by defining Syphilis as an infectious disease, the characteristics of which are as follows:

1st. The presence of a morbid poison or virus, which transmits the disease from one individual to another.

2d. The immunity which one attack generally confers against a second.

3d. A "period of incubation," during which the virus is latent, and gives no external manifestation of its presence in the system.

4th. A degree of order and regularity in the evolution of the symptoms.

These different propositions, which aphoristically set forth the theory of the author, are ably and fully discussed in the work, and sufficiently indicate an important issue between himself and others who have largely written on the subject, as well as their antagonism to the common and popularly-received doctrine.

No one now doubts, if ever there were those who did, that there is a specific virus upon which depends the transmission of this disease from one person to another. The thousands of successful inoculations have established this beyond a cavil. The great problem to be solved is the unity or duality of the disease: why, in respect to the course of syphilitic diseases (so called), there should be such an entire want of uniformity; why should one person who was afflicted with a chancre—with suppurating bubo of enormous extent—be exempt from contamination of the system, and suffer no ulterior consequences, while a second person, with perhaps a chancre of a few days' duration, would be afflicted with a long train of constitutional symptoms, extending over years, and in all probability to his posterity.

This difficulty was early recognized by writers and observers. The sagacious Hunter saw and pointed out the important fact that induration was a necessary ingredient in a chancre before it could affect the constitution. He looked upon this, however, as an evidence of what he called secondary or constitutional syphilis; he still maintained, however, "that there was no difference between the kind of matter, and no variation can arise in the disease from matters of different degrees of strength; the variations of the symptoms in different persons depending upon the constitution and habit of the patient at the time." Other writers, among whom were Carmichael and Abernethy, appear to have had strong convictions of there being distinct diseases classed under the head of syphilis, calling for entirely different modes of treatment; but it was reserved for Ricord, and those emanating from his school, to fully establish the fact of the existence of two distinct poisons, giving rise to two distinct diseases, which are never convertible into one another, and which pursue each its own course, being characterized by its own peculiar phenomena. We say Ricord and his immediate followers, for whilst it is true that Ricord never did in his writings distinctly announce his belief in the duality of the disease, he frequently expressed the opinion to his students that some day distinct origins would be found for the infecting and non-infecting chancre. And from the uniformity which he observed in his inoculations—soft chancre always producing soft chancre, and *vice versa*—he is said to have remarked, that "if these results are found to be constant, we should be forced to conclude that there are differences in syphilis which do not depend on the condi-

tion of the individual upon whom the cause acts, but upon differences in the cause itself."

Bassereau, who had been a pupil of Ricord, was the first to distinctly announce, and successfully maintain, the existence of two distinct poisons, and two distinct diseases. This occurred as long since as 1852, when he published his treatise on syphilitic disease of the skin. Of this author Dr. Bumstead speaks in the highest terms, on account of his cogent, logical reasoning, his accuracy of investigation, and originality of thought. In the following summary, which is translated from the above-mentioned work by Dr. Bumstead, and transferred to his, Bassereau gives his conclusions and his method of arriving at them. We give it entire, as presenting, in the briefest possible space, the difficulties involved in the investigation, and as a sample of correct logical induction, however startling and novel may be the conclusion. M. Bassereau says:

"There can be no question of the fact that there are chancres which may be treated by the most simple remedies, without the employment of any mercury whatsoever, and yet never be followed by symptoms of constitutional syphilis. Any one may convince himself of this truth by inquiring of old men, many of whom will state that they had chancres several times in their youth, which were treated with simple cerate, lint, or other means destitute of specific action, and, though they had never taken mercurials, there has not been the slightest appearance of constitutional syphilis during the thirty or forty years which have since elapsed. Many persons will also repeatedly have chancres and escape infection, but will finally contract another which will be followed by a syphilitic eruption. Why this difference? What should limit the action of the chancre in one case, and in the other extend it to the whole system? This is an interesting problem, and I will proceed to give you the results of my attempts to solve it. Let no one who is wont to pay respect to opinions which have received the stamp of authority take umbrage at the novelty of the propositions which I am about to present, or be hasty in rejecting them. The question at issue is so important that it requires serious examination. It is not to be decided by a vague appeal to impressions left upon the mind by a former experience, or by the doctrines of this school or that; it can only be settled by new investigations, undertaken for the very purpose. I ask, therefore, of unbiased men to devote the necessary time to verify the facts which I am about to present, and to give them their most scrupulous attention.

"Among the causes which I have investigated, I have endeavored to ascertain if age has any influence in the extension of syphilis to the general economy, and I have satisfied myself it has none. From birth to the most advanced years, man may have chancres, which, at any age, may be

followed by constitutional syphilis; and though infection is more common in the young, it is simply because they are more exposed. Sex is equally devoid of influence. Ricord states that chancres are less frequently indurated in women than in men, which is equivalent to saying that women are less liable to constitutional syphilis, since it can easily be shown that infection follows in most cases of indurated chancres. I do not believe, however, that Ricord carries the induction thus far. For my own part, I think that the rarity of induration in women is only apparent. Indeed, in examination of the same number of chancres, in the two sexes, I have found nearly the same proportion in the one as in the other; with this difference, that the induration was generally poorly marked on the vulva, while it was very decided on the penis. Just as the skin of various parts of the body is not equally susceptible of the development of induration, so this symptom is less frequent on the genital organs of women than men. But women on this account are not less exposed to constitutional syphilis. Though fewer persons of this sex are affected with this disease, it is because the number who are addicted to debauch is incomparably less than men; whence venereal affections of all kinds, constitutional syphilis included, are less common among them, and the difference cannot be attributed to mere sex.

"Again, idiosyncrasy will not explain the fact that a chancre produces only local effects in one person, while in another it infects the system at large. This is proved by the number of persons who, after having numerous simple chancres, contract another which becomes indurated and is followed by constitutional manifestations.

"Can such different results from two acts of contagion by a virus reputed the same be accounted for by the changes which frequently take place in the constitution, and by virtue of which a man is not affected in the same manner by the same agent at times very nearly approximated? Doubtless such dissimilar effects might depend upon the particular disposition existing at the time of contagion; but this explanation is admissible only in default of a better, especially as it is opposed to what we know of the action of specific causes, which always tend to produce the same results.

"I have carefully studied the temperament and constitution of persons affected with syphilitic erythema, in order to discover if any one of these organic modifications of the system might not influence the development of constitutional syphilis, but such inquiry has led to no positive result. I have found all temperaments affected in nearly equal proportion; none can therefore be regarded as peculiarly conducive to the extension of syphilis throughout the economy; and the same may be said of difference of constitution.

"An insufficient amount or bad quality of food, which is a powerful aggravating cause of syphilitic symptoms, has been so rarely observed in the cases of erythema which have come under my notice, that it is impossible to ascribe to it the development of general syphilis. The abuse of alcoholic stimulants, changes of temperature, and intercurrent diseases,

appear to have no more effect. I have merely noticed that chancres contracted during warm weather are more rapidly followed by syphilis than during cold.

"The above remarks clearly show that neither age, sex, idiosyncrasy, temperment, constitution, hygienic influence, nor co-esting disease which might be supposed to have depressed the system at the time the contagion took place, can, each by itself, be regarded as the determining cause of infection; and if we group them all together instead of considering each singly, my statistics will show that they will not account for one third of the cases of constitutional disease. The better to appreciate the etiological value of these influences, I have examined the condition of those persons whose chancers, in spite of the absence of all treatment capable of retarding or destroying a tendency to secondary symptoms, have not been followed by constitutional syphilis. I have compared one hundred such cases, with an equal number of patients affected with syphilitic erythema, and have found in each, nearly the same proportion of lyphatic temperments, feeble constitutions, bad hygienic influences, etc., thus confirming my opinion of the necessity of searching for other than physiological and hygienic causes of the generalization of syphilitic manifestations.

"I have also sought for the solution of this question in the chancre itself. I have endeavored to ascertain if repeated acts of contagion might not favor the appearance of secondary symptoms. On examination of the cases cited, I found that in 112 cases the eruption appeared after several successive chancres, and in 86 after a single chancre. Notwithstanding the predominance of the former, it cannot, I think, be admitted that the repetition of primary symptoms is the cause of constitutional affection. The idea that the action of a virus must be accumulated to produce its utmost effect is but little in accordance with the medical knowledge we already possess. In a number of my cases, also, there was so long an interval between the chancres that it appears to me difficult to attribute the first contagion any influence whatever in the production of the constitutional syphilis which followed the last exposure.

"Again, I have inquired if individuals affected with several chancres at one time, were not more exposed to constitutional infection than those having only one, and who consequently bore upon their persons a smaller surface secreting contagious matter; but I found that this could not be the case, for of the 170 instances of syphilitic erythema, 141 had but one and 29 multiple chancres; whence I conclude that neither the plurality of primary sores nor the extent of the secreting surface can be regarded as the cause of constitutional manifestations when they appear. These results are analogous to those obtained by Kirkpatrick, Dimsdale and Gatti, in experiments with the virus of variola, from which it appears that there is no connection between the number of inoculated points, and the copiousness of the consecutive eruption. Girot even observed that the eruption of variola was milder and more discrete after inoculating in six places, than when only two punctures were made.

"An analysis of these cases of syphilitic erythema, shows that the development of constitutional syphilis is not affected by the situation, degree of ulceration, or duration of the primary sores. General symptoms may supervene on whatever part of the body a chancre is situated; and the intensity of the former is not increased when the primary ulcer is at a distance from the genital organs as was once supposed by Boerhave. A decided tendency to extend by ulceration is also innocent of the development of constitutional syphilis; for I have seen the mildest and most superficial erosions, followed by infection, when phagedenic sores proved inocuous. Chancres which last for a long period are not more likely to terminate in secondary syphilis than those which cicatrize in a moderate or short space of time, as may also be seen from an examination of these 170 cases.

"On the other hand, induration is so frequent a symptom of these primary ulcers, that it is impossible not to admit that it bears an intimate relation to the syphilitic erythema which ensued. But even if it could be shown that all infecting chancres are indurated, must we necessarily say that induration is the cause of infection? By no means; for this would only be avoiding the question instead of solving it, since the cause of the induration could still remain to be discovered.

"Finally in my investigations I have endeavored to ascertain if any relation existed between the symptoms presented by my patients, and those persons from whom they contracted the disease. Such inquiry is often difficult, for men are frequently infected by women whom they never see again, and of whose name and address they are alike ignorant. Some have intercourse with several women within a short time preceding the appearance of the chancre, so that the sources of the virus is doubtful; others refuse to give any information with regard to persons with whom they had connection. In some cases, however, we are able to compare the symptoms in the two sexes. Patients often bring to me for examination the women who infected them, or else put me in the way of visiting them at their homes. Frequently, also, at the Hospital des Veneriens, I have found two or three, or even a larger number of men who contracted their disease from the same woman, either on the same day or at a few days interval. Finally, in several instances I have seen both a wife and husband, and even their children, all affected with syphilis which had been introduced into the family by one of its members.

"These repeated confrontations of persons infected by each other—undertaken at first to determine what syphilitic lesions are contagious and what are not; to show what symptoms may succeed others, and what modifications the same symptoms may undergo by transmission between individuals of different sex and temperment—have led to the discovery of that hitherto misterious cause, by virtue of which chancres sometimes limit their action to the part on which they are situated and the neighboring ganglia, and at other times extend their effects to the system at large, and are followed by constitutional syphilis. The following propositions

embody the results obtained from the confrontation of patients affected not only with erythema, but also with other syphilitic eruptions and primary sores, with those persons from whom their disease was derived:—

"If we compare persons who have had chancres followed by constitutional symptoms with those persons who inoculated them, or with those whom in turn they have inoculated, we find that all, without exception, have had constitutional syphilis; never, in any case, has the action of the chancre been merely local.

"On the other hand, by the comparison of individuals who have had chancres which did not result in general manifestations, with the individuals who infected them, or with those whom they have infected, we find without exception that the latter, equally with the former, have had chancres, the action of which was limited to the part first inoculated. Thus a chancre followed by constitutional syphilis never gives rise to a mere local chancre; and a purely local chancre cannot produce a chancre which will be followed by the general manifestations of syphilis. The uniformity of the facts which have come under my observation—none but apparent exceptions having ever been met with—fully justify me in enunciating the following proposition as a law:—

"*Whenever a person has a chancre and afterwards constitutional syphilis, the generalization of the syphilitic phenomena is first of all due to the fact that the person from whom the contagion came had a chancre which was necessarily followed by constitutional symptoms.*

"Of thirty-four cases of syphilitic erythema, in which I have been able to confront the patients with those who have infected them, and in some instances with those whom they had afterwards infected, *in thirty-one*, conformable to the law just enumetated, all the individuals thus confronted presented lesions of the same character; all without exception had chancres which were followed by constitutional syphilis. In only three, from the absence of symptoms of general infection, did there seem to be any exception, but induration was found at the site of the primary sore, showing that the exception was only apparent; moreover, the mercury which had been administered for the latter, fully accounted for the absence, or delay in the appearance, of constitutional manifestations."

The attention of the profession having been thus directed anew to the important question of the unity or duality of the chancrous virus, other observers immediately set to work to test the accuracy of M. Basereau's observations, and new facts soon began to appear, all of which were found to point in the same direction. Numerous cases have been furnished by the observation of Drou, Diday, Rollét, Fournin, Ricord, Caby and others, which go incontestably to establish the fact that the character of the ulcer passes unchanged from one individual to another.

The investigations of Fournin, especially, having established

the correctness of M. Basereau's conclusions in regard to the transmission of primary sores in persons who had been previously free from syphilitic taint, he undertook a solution of the qustion, how far, if at all, the conditions would be modified by communicating an infecting chancre to a person who already had had constitutional syphilis. The result was as might have been anticipated—the person having once had the true disease, became affected, to all appearance, with a soft chancre, which was limited entirely to its local effects; but in all the cases observed, where this apparently soft chancre was communicated to a third person who had not previously been syphilized, it re-asserted its original infecting character, accompanied by indurated inguinal ganglia and constitutional manifestations.

According to these observers, the results thus far attained, by comparison of the symptoms of those giving and those receiving primary sores, may be thus summed up in the following conclusions:

"1st. Among persons free from previous syphilitic taint, each of the two species of chancre is transmitted in its kind; the simple chancre as a simple chancre, limited in its action to the neighborhood of its site; the infecting chancre as an infecting chancre, followed by constitutional manifestations.

"2d. A primary sore with a soft base, unaccompanied by induration of the neighboring lymphatic ganglia, in a subject already affected with syphilis, will, when communicated to a person free from syphilitic taint, give rise to a soft or hard chancre, according to the nature of the virus which occasioned the first-mentioned ulcer.

"3d. The virus of the non-infecting chancre is a poison distinct from that of the infecting chancre.

"4th. Phagedenic ulceration does not depend upon a specific difference in the ulcer."

We are aware that these conclusions are sufficiently novel and startling; that they have not as yet been adopted by any considerable number of observers, and that in many cases they have met with a most determined and violent opposition; and yet we believe firmly that they are true. That this is the only theory which will satisfactorily explain the many apparently conflicting opinions, and form the basis of any thing like a satisfactory and rational mode of treatment, and remove at once all that doubt and uncertainty as to the cases in which mercurials are indicated, and those in which they are not.

The advocates of the duality of the poison, it should be remarked, do not insist upon the uniformity of the external appearance of the sore, nor that it enters as a necessary element into this consideration. And we apprehend this is one reason why some writers have refused to adopt the views here maintained. Induration is not a necessary concomitant of the infecting chancre, although usually present. It is sufficient to say, that one species of virus invariably affects the system; the other, when unmixed, never; thus establishing the necessary existence of two diseases, although induration be left entirely out of the question. We may further remark, that they—the advocates of the new pathology—do not regard their theory as proving the existence of two kinds of syphilis. The term "syphilis" implies not only a local, but general disease—conditions which are alone fulfilled by the so-called hard chancre and its constitutional syptoms.

The soft chancre and its attendant bubo should not, properly speaking, be described under the head of syphilis, but be considered apart, like gonorrhœa. It is also desirable to adopt a different name for this ulcer; as, for instance, the term "chancroid," which is already much employed, especially by French authors. This is the term used by Dr. Bumstead, usually, when speaking of the non-infecting or soft chancre.

We do not deem it out of place, as indicative of the spirit manifested towards these new pathological views, to extract a paragraph from the last edition of Prof. Gross's Treatise on Surgery.

"Chancre," he says, "presents itself under two varieties, the indurated and the non-indurated or soft; all other distinctions being now abandoned, on the ground, whatever difference of appearance the sore may exhibit, they are solely and entirely of an accidental character, and therefore altogether independent of the nature of the syphilitic virus. It is impossible in the actual state of science, to determine why one person should have a hard chancre and another person a soft chancre. In the adjudication of such a question it will not do to invoke the existence of a corresponding number of poisons; to do so would be to destroy the unity of the disease, and to invest the subject with inextricable confusion. The most philosophical course, in the absence of facts, is to assume that there is really only one virus, but that this virus is capable of being so modified in its character, by local and constitutional causes, or by internal and extrinsic circumstances, as to produce effects the very opposite of each other in different individuals. How else can we explain the occurrence of indurated and non-indurated sore upon the genitals?

"The laws of disease have their irregularities and anomalies no less than the laws of health: exceptions meet us every where, and it would indeed be singular if they should be wanting altogether in syphilitic disease. In the production of the two varieties of chancre here alluded to, some powerful moderating circumstance must be in operation, shaping, influencing, and controlling the result. Small-pox, scarlatina, measles, and other eruptive diseases, are subject to remarkable departures from the natural standard, and yet no sensible pathologist would for an instant suppose that every new feature exhibited by these affections was indicative of the existence of a new poison."

Now, to our mind, a more irrational, illogical, unsatisfactory method of disposing of a proverbially knotty pathological difficulty could not be conceived of. Such a course of reasoning, if invariably applied, would arrest all progress in medical science—nay, would thrust us back hundreds of years, into those dreary regions of doubt, darkness, and superstition! Who now doubts the existence of separate poisons in Gonorrhœa and Syphilis? Yet, before the experimental reasoning of Hunter, they were universally regarded as the same disease, "modified by local and constitutional causes." Were not even Variola, Scarlatina, and Rubeola for a long time originally confounded together, supposed to be produced by the same cause, only modified by extrinsic circumstances? If, "in adjudicating such a question, it will not do to *invoke* the existence of a corresponding number of poisons," certainly it is competent under all circumstances to appeal to facts, and follow their guidance to whatever conclusions they may lead, however much they may disturb our preconceived opinions, even "to the destruction of the unity of the disease."

"Invest the subject with inextricable confusion." Shades of departed Hunter and immortal Bacon! If it be impossible, in the actual state of science, to determine why one person should have indurated and another soft chancre, in the first *always* followed by general symptoms, in the other *never*, is there any presumption in endeavoring, by an appeal to facts and experiment, to place science in such a position as will enable us to determine why such should be the case?

Scarcely any two diseases differ more widely than chancre and chancroid. In the first, the ulcers generally are small and hard—sometimes a mere abrasion, disappearing without any, or very mild treatment, nearly always followed by induration of the lymphatic

ganglia, and in from six weeks to three months with general symptoms; seldom or never recurring again in the same person, and curable only with mercury. In the other, the ulcers large, soft, multiple, mostly followed by suppuration in the groin, and never affecting or tainting the system; disappearing always and only under local treatment, and occurring an indefinite number of times in the same person. Now when it is considered that these two diseases specifically reproduce themselves with all their train of symptoms, is it philosophical or not to invoke the existence of separate poisons? Are we not completely shut off from any other conclusion? and is not such a classification eminently calculated to simplify our views of both the disease and treatment, in place of investing it with "inextricable confusion?"

In regard to the second proposition, that constitutional syphilis rarely occurs more than once in the same person, Dr. Bumstead, although not holding the law as absolute, looks upon it as more nearly so than in kindred contagious diseases; as, for instance, small-pox, measles, scarlatina, etc. It is not contended that persons who have previously undergone syphilisation, or have been affected with the true disease, enjoy a perfect immunity in future from its infecting virus; but it is emphatically true, that they are inoculated with great difficulty, and that, even when the ulcer is contracted from a sore of the true infecting type, it is seldom it presents the characteristic features of the hard chancre, and rarely, if ever, is followed by general symptoms.

Of the truth of this we had not long since a very instructing example. A married man presented himself to us to be treated, as he stated, for gonorrhœa. Upon examination, we found what would be considered as the symptoms of that disease. He had purulent discharges from the urethra, painful micturition, etc. A short time after we were requested by him to see his wife also, who, he stated, was suffering from some disease of the genitals. We were much surprised to find she had chancre, apparently of the true indurated kind, on the vulva. We now regarded his trouble as internal chancre, and treated it accordingly. From the well-known social habits of the two persons, there could exist scarcely a doubt as to whose breach of the marital rights the disease was due; indeed, there was scarcely an attempt at concealment—his notoriously dissolute habits at once settled the point. In the man the disease was confined to its strictly local manifestations; in the wife the

whole system became contaminated—the characteristic erythema being abundant over her whole person, the throat being affected, etc.

Apparently, this might be claimed by the opponents of the duality of the poison as a triumphant refutation. Here was a case, originating, evidently, from the same source—a case of confrontation from which there could be no escape—and yet we find in one of the patients true constitutional syphilis; in the other simple local disease. But when we go a step farther, and find that this man had, at a previous period of his life, been affected with the disease constitutionally, it presents an entirely new feature. Although he had been successfully inoculated, locally, and had even communicated to his wife true syphilis, his system, true to the law of diseased action, precluded the possibility of being affected by it. Our experience, although not very large, has been as extensive as usually falls to the lot of those confined to private practice, and yet we have never seen an exception to the above rule. Dr. Ancel, in his report on syphilis in Rankin's Abstract for 1845, says Dr. Colles makes the curious remark, that he had never seen or heard of a single instance of a syphilitic infant, although its mouth were ulcerated, producing ulcerations on the breast, when suckled by its own mother; whereas, very few instances have occurred where a syphilitic infant did not affect a stranger, hired wet nurse, previously in good health. He further remarks that this opinion corresponds with that expressed by the late Dr. Wallace, that an individual ceases to be susceptible of inoculation from his own primary sore as soon as his constitution becomes affected, although symptoms may not have made their appearance. Of course such an occurrence would excite no surprise when received through the medium of the pathological views here maintained, and is only confirmatory of them.

"A chancroid," then, may be considered "as the local and contagious ulcer, which, being most frequently transmitted by sexual intercourse, chiefly affects the genital organs."

"A chancre is the initiatory lesion of acquired syphilis, arising at the point at which the virus enters the system, and separated from the general manifestations of constitutional infection by a period of incubation. It has been generally supposed that the *virus* of a *chancre* could alone give rise to chancre; recent investigations, however, appear to show that the conditions of the above definition are fulfilled, whatever may have been the source of the virus, whether derived from *primary* or *secondary* lesion.

"In common parlance, both the chancroid and true syphilitic sore are included under the name of chancre."

Dr. Bumstead, whilst admitting but one true and radical distinction between chancres as to their specific difference, namely, the simple and infecting chancre, for convenience of considering the subject, makes the following classification:

1st, The simple chancre; 2d, The infecting chancre; 3d, The mixed chancre; 4th, The gangrenous chancre; 5th, The phagedenic chancre.

These different divisions of the subject are fully and ably discussed, and much valuable statistical information furnished as to their relative frequency and position.

The peculiarities and appearance which characterize each are graphically pointed out with a clearness and precision which divests the subject from all that mystery and confusion in which the prolix and exhaustive descriptions of many writers have involved it.

On the subject of *Diagnosis* the author makes the following judicious and pertinent remarks:

"When a sore can be watched through the stages of evolution and decline, it is rare that we are not able to decide whether it be a chancre or not; and if so, to what species it belongs. The case is quite different when we are called upon to express an opinion, from a single examination, as to the nature of an erosion or ulcer, especially if the knowledge of its history be imperfect, either through the patient's ignorance or deceit; the diagnosis may be comparatively easy in most cases, but in many it is difficult—in some impossible. Much will depend upon the time at which the sore is seen.

"The chancroid, and especially the infecting chancre, when fully developed present symptoms which are almost unmistakable to any one conversant with syphilis; but at an earlier period, particularly if they occupy a previous solution of continuity, no human eye can see, and no human means detect, at once and without delay, the presence of a specific virus.

"These remarks are not unimportant, since most patients suppose that a competent surgeon can tell a chancre at first sight; and I have known many young practitioners make the same mistake, and feel much chagrined at meeting with cases in which they were at fault. To such it may be a consolation to know that experience, though doubtless adding much to the facility of a diagnosis, cannot, however great it may be, invariably enable the possessor to say, from a single examination, such a sore is a chancre, and such a one is not.

"The following tabular view of the diagnostic character of the simple and infecting chancre may assist materially in forming a differential diagnosis:

The Simple Chancre.	The Infecting Chancre.
Origin.	*Origin.*
Always derived from a simple chancre or virulent bubo.	Always derived from an infecting chancre or secondary lesion.
Anatomical Characters.	*Anatomical Characters.*
Generally multiple, either from the first or successive inoculation.	Generally single; multiple, if at all, from the first; rarely, if ever, by successive inoculation.
An excavated ulcer, perforating the whole thickness of the skin or mucous membrane.	Frequently a superficial erosion, not involving the whole thickness of the skin or mucous membrane, of a red color, and nearly on a level with the surrounding surface. Sometimes an ulcer, when its edges are sloping, hard, often elevated, and adhere closely to the subjacent tissues.
Edges abrubt and well-defined, as if cut with a punch, not adhering closely to subjacent tissues.	Surface hollowed or scraped out, smooth, sometimes greyish at centre.
Surface flat, but uneven, "worm eaten," wholly covered with greyish secretion. No induration at base unless caused by caustic or other irritant, or by simple inflammation; in which case the engorgement is circumscribed, shades off into the surrounding tissue, and is of temporary duration.	Induration firm, cartilaginous, circumscribed, movable upon tissues beneath. Sometimes resembles a layer of parchment lining the sore. Generally persists for a long time.
Pathological Tendencies.	*Pathological Tendencies.*
Secretion copious and purulent, inoculable.	Secretion scanty, chiefly serous; inoculable with great difficulty, if at all, upon the patient or person under syphilitic diathesis.
Slow in healing. Often spreads and takes on phagedenic action.	Less indolent than the chancroid. Phagedena rarely supervenes, and is generally limited.
May affect the same person an indefinite number of times.	One attack affords complete or partial protection against a second.
Characteristic Glandular Affections.	*Characteristic Glandular Affections.*
Ganglionic reaction absent in the majority of cases. When present, one gland accutely inflamed and generally suppurates, pus often inoculable, producing a soft chancre.	All the superficial inguinal ganglia on one side, or both, enlarged and indurated; distinct from each other; freely movable; painless, and rarely suppurated; pus never inoculable.
Prognosis.	*Prognosis.*
Always a local affection, and cannot affect the system. "Specific" treatment by mercury and iodine always useless, and, in most cases, injurious.	A constitutional affection, secondary symptoms unless prevented or retarded by treatment, declare themselves in about six weeks from the appearance of the sore, and very rarely delay longer than three months.

XUM

In speaking of the treatment of Syphilis, Dr. Bumstead commences by remarking, "that it would be well if the physician or surgeon in undertaking the treatment of any disease could know how far nature could dispense with his services." There is no disease, perhaps, in the treatment of which there is more discrepancy and confusion than the one under consideration. Many writers still advocating the indiscriminate use of mercury, whilst others discard it altogether. These various and exclusive methods of treatment, have established the following conclusions, that:

"Although general treatment by mercury doubtless facilitates the cicatrization of some chancres (the infecting,) yet it is necessary for the accomplishment of this process in none, and in the majority (taking chancres in the aggregate) is positively injurious."

"All primary sores, except perhaps the phagedenic, will heal spontaneously, without any local treatment except cleanliness, generally within a period of a few months, and often within a few weeks, but not always with as little detriment or the same comfort to the patient as if interfered with."

In regard to the use of mercury, we have already, in the course of this notice, frequently intimated the views of our author, as well as his practice. He restricts its use entirely to the indurated—infecting chancre, and the constitutional symptoms which follow it. Under no circumstance is it, in his opinion available—indeed never administered, if carried to any extent, without producing harm, in chancroid, or simple chancre.

Looking upon this, as entirely local disease, an ulcer produced by a specific cause, it can never call for general treatment other than in maintaining the different functions of the animal economy at the healthiest standard possible. In regard to the other, the infecting chancre, the case is altogether different. It is here that we find the use of mercury of inestimable value—nay almost a *sina qua non*. Indeed, admitting the value of local treatment, of which we shall speak hereafter, we are often, from the locality of the chancre being such as to cut off all access to it, restricted entirely in our efforts to cure, to general treatment. And it is truly surprising, how rapidly it is generally absorbed, and the ulcer cicatrize, under the judicious administration of this drug, without any local application having been resorted to. Admitting such to be the true state of the case, there would be room for little or no embarrassment were the diagnosis at all times easily made out. Unfor-

tunately, however, such is not the truth. What is the course then to be pursued in doubtful cases? Shall we, as advocated by some writers, administer mercury in all cases of primary sore in order to be certain of including the doubtful ones? Certainly not; that would be to inflict positive injury on twenty persons, that five might receive an equivocal benefit.

Believing as we do that the symptoms are generally so obvious, as in nearly all cases to enable a careful, judicious surgeon to make a correct diagnosis, we think it is far better to treat the ulcer locally, where accessible, and wait the manifestation of general symptoms, before resorting to constitutional treatment, involving the administration of mercury.

Some writers, as Diday and Halstead, postpone invariably the use of general means until the secondary symptoms have been pronounced. To this course Dr. Bumstead objects, as although mercury will not always prevent their accession, the liability of their occurrence is very much diminished by its use, and if they do occur, they are always much modified and less prominent. For his mode of administering it, and the various circumstances qualifying its admissability we must refer to the book itself, which is replete with suggestions of great practical utility.

On the second division of the subject of treatment, that of local applications for the purpose of destroying the chancre, the directions given are very full.

Dr. Bumstead whilst admitting the great utility of the early destruction and cicatrization of the sore, does not agree with Ricord, Hunter and others, that it certainly prevents, or even very greatly lessens the liability to the occurrence of secondary symptoms. Viewing, as he does, the local affection only "as the initiatory lesion of acquired syphilis" its eradication it matters not at how early a date, will not in all cases prevent its showing subsequently as a general affection.

Diday has thoroughly cauterized chancres four days, and others five days after coitus, and secondary symptoms have still appeared.

He also reports the following cases:

"Case 1. A man, aged 45, somewhat of a syphiliphobist, and consequently very attentive to the condition of his genital organs, consulted Diday, Sept. 24, 1858, for a chancre which he had first observed three days before. The sore was at once cauterized with the paste of vegetable carbon and sul. acid, in use at Hopital du Midi.

"The patient was seen again Oct. 3d, when the chancre was found to be healed and to have left a healthy-looking cicatrix. Slight induration of a few ganglia in the groins inspired, however, some doubts as to the future.

"Nov. 8. The cicatrix presented a well marked mass of induration, and the glands in both the groins were also indurated: and the patient complained of scabs in his hair.

"Nov. 19. A papular eruption of a decided copper color appeared over the whole body.

"CASE 2. A young man, who, from former experience, was familiar with the appearance of chancres, sought advice Oct. 14, 1858, for a *small abrasion*, which as he stated, appeared only twenty-four hours before. It was immediately burnt with the carbo-sulphuric paste.

"Oct. 28. The sore had cicatrized, but had left well marked induration, which also involved the inguinal ganglia.

"Nov. 26. He presented a papular syphilitic eruption, and scabs upon the hairy scalp."

The following case is reported by Langlebert:

"A student of medicine, who was thoroughly informed upon all subjects connected with syphilis, consulted Langlebert for a small ulcer behind the corona glandis, which he was certain had appeared only two days before. The sore was superficial, scarcely larger than a pin-head, was not indurated, nor accompanied by engorgement of the inguinal ganglia. It was cauterized the same day with nitrate of silver, and healed in less than a week.

"No induration appeared in the groin, but two months after constitutional syphilis declared itself."

Such occurrences as these sufficiently indicate that the destruction of the infecting chancre, however early practiced, is frequently incapable of preventing general symptoms; should teach us the necessity of great watchfulness; and render us extremely cautious in giving an opinion, based upon this fact alone, as to the probability of the disease being completely eradicated. Physicians are frequently consulted as to the propriety of forming a marriage connection—under the circumstances here supposed—and a permission to do so has, in many cases, been followed by developments of a most disastrous character.

Dr. Bumstead sums up his remarks on the treatment of chancres as follows:

"1st. In the treatment of all primary sores, the general health is to be maintained, as nearly as possible, at a healthy standard; avoiding both a depressed and stimulated state of the system. Local applications should be simple and unirritating—cleanliness should be carefully observed.

"2d. Simple chancres do not require the administration of mercury,

either as a preventive of constitutional affection or to promote cicatrization of the ulcer. The most effectual treatment is deep cauterization, with a powerful caustic, as fuming nitric acid, repeated as often as may be found necessary.

"3d. The internal use of mercury is justifiable only in undoubted cases of infecting chancres; and, in nearly every case of this species of primary sore, is the only treatment required. The abortive treatment, at the earliest period at which the sore can be detected, is ineffectual in preventing constitutional infection.

"4th. When in doubt as to the nature of the chancre, treat it as belonging to the simple species, and keep the patient under observation until the period of incubation of secondary symptoms has been passed in safety.

"5th. Inflammatory chancres are to be treated by rest, low diet, and other antiphlogistic measures, so long as the accute symptoms continue; if gangrene occur, tonics and stimulants will be required.

"6th. The treatment of phagedenic chancres consists in attention to the hygenic condition of the patient, nourishing diet, tonics, stimulants, opium, and deep cauterization by means of nitric acid, Vienna paste, or the actual cautery, followed by the appropriate lotions, as potassio-tartrate of iron. Mercurials are highly detrimental in accute phagedenic, and are rarely of benefit in any case in which this complication is present."

The remaining chapters of PART II. treat of Bubos, General Syphilis, Syphilitic Affections of the Skin, Syphilitic Affections of the Appendages of the Skin, Mucous Patches, Gummy Tumors, Syphilitic Affections of the Mucous Membranes, Syphilitic Affections of the Eye, Syphilitic Affections of the Ear, Syphilitic Orchitis, Syphilitic Affections of the Muscles and Tendons, Syphilitic Affections of the Nervous System, Syphilitic Affections of the Periostum and Bone, Congenital Syphilis.

All these subjects are ably and logically discussed, and, illuminated from the new stand-point which our author has taken, very many difficulties have been removed, and points, hitherto obscure and unsatisfactory, have been rendered plain and inteligible. We wish this book was generally read by the profession, at least all those who attempt to treat syphilic diseases. We have not unfrequently been surprised to hear persons express their ignorance of its contents, whose position would pre-suppose their acquaintance with the current literature of the profession. That they would be greatly benefited themselves by consulting its pages, we are very confident; nor can there be any doubt that a familiarity with its principles and practice would be productive of much good to their syphilitic patients. R. M. D.

COLUMBUS, Nov. 1, 1862.

Anatomy of the Arteries of the Human Body, Descriptive and Surgical, with the Descriptive Anatomy of the Heart. By JOHN HATCH POWER, Fellow and Member of Council of the Royal College of Surgeons; Prof. of Descriptive and Practical Anatomy in the Royal College of Surgeons; Surgeon to the City of Dublin Hospital, etc. Authorized and adopted by the Surgeon-General of U. S. Army for use in Field and General Hospitals. Philadelphia: J. B. Lippincott & Co. 1862.

It will be noticed this work comes from abroad—Dublin, Ireland. It was undertaken, as the Preface states, chiefly with a view of assisting the student while engaged in the study of Practical Anatomy, and of affording him such practical information in connection with the Anatomy of the Arterial System as may be of advantage to him long after his studies have been completed. The anatomical details are very much simplified; and such material facts in relation to operations on the principal arteries of the body, as may lead to correct conclusions relative to the treatment of the various accidents and diseases to which these vessels are exposed. The author has not overlooked the fact that there are many practitioners, particularly those in rural districts, who do not possess any opportunity of refreshing their memories upon anatomic points by actual dissection. The present volume to such will prove to be very valuable.

The work is very finely illustrated from drawings in part executed expressly for it. Besides the illustrations in the English edition, numerons others have been inserted by the American publishers.

It is right just here to state that this work is published at present under the authority of the Surgeon-General, for the use of surgeons on the field of battle and in hospitals. If carefully consulted it will aid those now in the field very much in the discharge of their duties. The publication, moreover, is very opportune.

Physician's Visiting List, Diary, and Book Engagements for 1863. Philadelphia: Lindsay & Blakiston.

The contents of this little volume embrace: *Table of Signs, Almanac, Marshall Hall's Ready Method in Asphyxia, Poisons and their Antidotes,* Table for calculating the Period of Utero-Gestation, blank leaves for Visiting List, etc., etc., etc.

For sale at City Bookstores.

Hospital Steward's Manual, for the Instruction of Hospital Stewards, Ward-Masters, and Attendants, in their several Duties. Prepared in strict accordance with existing Regulations and the customs of service in the Armies of the U. States of America; and Rendered Authoritative by order of the Surgeon-General. By JOSEPH JOUVIER WOODARD, M.D., Assistant Surgeon U. S. A., Member of the Academy of Natural Sciences of Philadelphia, etc. Philadelphia: J. B. Lippincott & Co. 1862.

This Manual, containing some 324 pages, has been gotten up by the author at the instance of the Surgeon-General U. S. Army, Wm. A. Hammond, M.D. A review of its contents shows it to embrace a very considerable amount of matter selected and arranged in accordance with the scope of books of its character.

The work is divided into FIVE PARTS. PART I. *Hospital Stewards.* PART II. *Discipline, Police, and General Supervision of Military Hospitals.* PART III. *Food and its Preparation.* PART IV. *The Dispensatory.* PART V. *Hints on Minor Surgery and Dressings, for Hospital Stewards.*

Considering the emergencies under which this little volume has been produced, it is a very creditable production. Dr. Woodard writes well and much more fully on the topics introduced than might have been expected.

The work will undoubtedly assist Hospital Stewards very much in the discharge of their duties, and if its teachings and suggestions are heeded, much improvement will take place in the management of Hospitals.

The Hospital Steward is a *non*-commissioned officer; he ranks with ordnance sergeants, and next above the first sergeant of a company. (*Revised Regulations for the Army*, 1861.) He is therefore entitled by his rank to obedience from all enlisted men who may be in the hospital, whether patients, ward-masters, nurses, or employees, who must cheerfully comply with all his reasonable and lawful commands.

Editorial and Miscellaneous.

DEATH FROM CHLOROFORM.—A few days ago Dr. J. R. Flowers, a gentleman of our city practicing on the Homœopathic system, went some eight miles into the country for the purpose of amputating a couple of toes. Chloroform was administered, and death followed before the operation was completed. The following were the circumstances:

The patient was a little girl, about 10 years of age, of good constitution, and, as far as was known, was at the time free from disease. Chloroform was administered from a handkerchief, with the patient in the recumbent position. Anæsthesia did not come on readily, and, as a consequence, some twenty minutes were consumed before commencing the operation, and even then the effect was not such as to destroy entirely sensibility; one toe was taken off, after which the patient raised up and talked for a few minutes. The administration of the chloroform was resumed preparatory to the removal of the second toe, but still not carried to the point of complete insensibility. The operation was commenced, but before it was completed the patient took a convulsion, and at once ceased breathing. The usual means of restoration were at once adopted, such as throwing cold water on the face, inflating the lungs, opening the doors and windows for fresh air, and turning the patient on the side, with manipulations to the chest—all, however, to no purpose; the vital spark had fled.

A "*Coroner's Inquest*" was held over the remains, to determine the cause of death. Wm. Trevitt, M.D., of this city, and myself were called upon to hear the testimony connected with the administration of the chloroform, and give an opinion. We united in the statement that the death was due to the chloroform administered, and that, from all that could be learned from the physician, Dr. Flowers, and those present at the time, the drug had been administered with proper caution.

Remarks.—The above is the first death that has occurred, as far as we have heard, in this region from the use of chloroform, although it is the practice here to use the article in surgical operations; and many use it also in obstetrical practice. The case

therefore, assumes to us no small importance. It brings home at once the stirring, and I might say, shocking truth, that this mighty drug, so valuable in taking away suffering, also once in awhile takes away life, and that too without our being able to comprehend the reason why it does so. It is not often, it is true, that it shares with potent remedies this sad privilege; still the fact, in itself, is an extremely unpleasant one.

It has been stated, and is generally believed, that the fatal effect of the drug is never displayed, if administered barely to the point of destroying sensibility to pain. The above case contradicts such an impression. Sensibility was not destroyed at either administration. On the application of the knife for the removal of the second toe, the patient complained, and a few moments afterwards took a convulsion and ceased breathing.

Apology.—The present number of the Journal has been delayed beyond the usual time for its appearance, by the scarcity of paper. Our printer has been put to considerable inconvenience in obtaining paper such as the Journal has been printed on. It seems that the raw material has become uncommonly scarce, and, as a consequence, many paper-mills have had to stop. In future, we expect fewer casualties.

To Subscribers.—This number of the Journal closes the 14th Volume. No bills have been sent out during the year. This has not been because our dues have not been needed to pay current expenses, but because those upon whom the duty devolved were too scarce of time. Those who know themselves indebted will please remit without further delay.

For the Ohio Medical and Surgical Journal.

Letter from Dr. T. J. Pearce.

Mechanicsburgh, Ohio.

James Kaywood, aged 22 years, of previous good health, and stout, compact form of body, while acting as a private in the 66th

Reg. O. V. I., during the month of February in the present year, suffered an attack of pleurisy, was sent to hospital, where, after a few weeks' treatment, he so far recovered as to return to his home in this vicinity. He continued feeble, but without treatment, until the middle of last May, when I was called to see him, and found him laboring under symptoms to my mind indicating an effusion in cavity of left pleura. He also had ascites, with a general anasarcous tendency.

I put him upon treatment, but after a few weeks, seeing no perceptible amendment, but rather an increase in the chest trouble, I advised tapping as the only means of relief.

He was now able to walk about and attend to light business, but was feeble in body, circulation slightly accelerated, dry cough, dyspnœa inability to lay on right side, left side considerably distended, intercostal spaces full, with dullness on percussion, and absence of respiratory murmur on left side below third rib. Heart's impulse was found under right nipple. Abdomen was considerably distended, yielding flat sound on percussion. Bowels normal, and appetite good.

In this condition he went to Springfield and consulted Drs. Dunlap, Rogers, and Buckingham, who agreed, I believe, in the opinion that there existed serous effusion both in pleura and peritoneum, and that tapping the chest must be resorted to, and the sooner the better. Soon after his return home he sent back for Dr. Dunlap, and on consultation, we introduced (Dr. Dunlap operating) the trocar between the seventh and eighth ribs, and removed about five pints of serum.

I then put him upon calomel, Digitalis, nit. potash and squills, with laxative portions of cream tartar and jalap, under the use of which the ascites completely disappeared in about three weeks time. After the tapping the breathing improved, and for a time the chest symptoms promised a favorable result; the heart, however, never recovered its natural position. But in the course of five weeks, the symptoms for an operation were as urgent as at first; and although the symptoms, such as night sweats, paroxysms of hectic fever, etc., usually regarded as indicating *pus*, were absent, yet on tapping I drew off about half a gallon of pure pus.

I now put him on treatment to brace the general system and arrest and absorb effusion. But in a few weeks I found the effusion again present, and again I punctured, and this time, as near as we could

arrive at the amount, it discharged thirteen pints of pus. And so the case went on collecting and being discharged, until at five different tappings I removed in the neighborhood of five gallons of pus, besides the water discharged from the chest in the first operation, and the amount taken from the abdomen and general system by the medicinal treatment. After the second tapping and discharge of pus, his general health began to give way more perceptibly; night sweats and paroxysms of hectic fever were now more manifest; the flat sound gave place to a general tympanitic resonance over the left lung, save when and where matter would exist before tapping. And although he became quite feeble, respiration hurried, and great dyspnœa, yet he was able to be up a part of the time, and with slight assistance continued to walk from his bed to his chair and back again, up to within a few hours of his death, which took place on the 14th of the present month, about four months from the first tapping.

Aided by Drs. Bond, Clark, and H. C. Pearce, we made a post mortem examination, first, however, drawing off the pus, which in amount was at his death about two gallons. Fearing the system would sink under the shock, I had not operated on him for ten days previous to his death: seeing, too, that death was inevitable. Left pleura, costalis and pulmonalis gone. Left lung disappeared; nothing of it remaining but a mere bulbous extremity of left bronchus, not to exceed an ounce in weight. Heart normal, but resting to right of sternum. Right lung, from continuous compression, had lost fully one-half its size. Right lung also adhered to costal surface, and below to diaphragm.

Such, in brief, was the condition of the viscera of thorax. One lung entirely gone, and the other one for months crowded between the heart and ribs, had lost half its substance, and yet life was supported for weeks.

The case having been treated by us during our busiest season of practice, and not expecting to report it, I omitted noting some important details, such as accurately measuring the fluid, dating the operations, etc. But the reader can, from the outlines given, draw his own inferences as to the points of interest.

Traumatic Tetanus.—The *Lancet* publishes a case of traumatic tetanus successfully treated with opium and belladonna poultices, by Dr. S. Cartwright Reed. The patient was a lad of healthy appearance aged 17, who was knocked down by a cart, a wheel grazing the side of his head, nearly tearing away the right ear, and fracturing the right maxilla, at its symphysis. Notwithstanding a careful dressing of the wound, gangrene supervened in twenty-four hours, which made it necessary to remove the ear, when a linseed poultice was applied and saline aperient administered. The wound progressed unfavorably, and on the third day tetanic symptoms began to show themselves. An aperient draught was ordered immediately, and linseed poultice with a drachm of opium powder applied to the wound. The next day belladonna mixed with glycerine was substituted for the poultice, and one grain of opium with two of calomel given at night. Slight improvement was soon apparent and the treatment continued, substituting mercurial ointment for the glycerine, and after the sixth day the tetanic spasm gradually disappeared, and the body rapidly recovered—*Amer. Med. Times.*

Opium in Delirium Tremens.—Dr. D. L. D. Sheldon, of New York, gives us the following item of practical experience in the use of large doses of opium in delirium tremens. He says: A few years since I treated a case (I am sorry to state a *physician*) with delirium tremens, it being the *fifth* time in less than the same number of years I had attended him for his trouble. He tolerated a very great quantity of opium and its preparations. *At this time* I commenced the treatment with a *liquid* equivalent to *two* grains of opium every *fourth* hour, then increased with careful attention to *three, four, six* and *eight* grains every *fourth* hour, and lastly *twelve* grains every *fourth* hour, terminating with the *third twelve*-grain dose, which produced the desired effect. The patient slept about six hours, not *very* sound, without stertorous breathing; awoke, soon fell asleep again, and slept *well* about the same length of time; after which I had no further trouble with him, as he was then capable of getting along with domestic attention. I am not able to state the precise quantity taken within about four days; but it must not have been far from one hundred and twenty grains

—averaging one and a quarter grains per hour. Although my purpose of cure was effected, I cannot state, as did the editor of the *Pacific Med. and Surg. Journal,* that "this case *alone* determines, in our estimation, the innocuousness of opium in enormous doses."—*Med. and Surg. Reporter.*

Food in Typhoid Fever.—Dr. Hérald confirms the opinion expressed some time ago on this continent, as well as in England, that in the management of typhoid fever the all-important, the capital question is that of food; prolonged abstinence leads to the most disastrous results. One lady patient was sinking steadily under a strictly enforced abstinence; when the pulse numbered 120, nocturnal agitation with wandering delirium, vomiting and diarrhœa had set in, the effects of nutriment were tried. At first, only a few drops of iced beef-tea could be swallowed with the utmost difficulty; by and by the food remained on the stomach, and in proportion to its increase, the pulse fell, the delirium yielded, and the patient recovered. Mr. Marotte has established that vomiting, diarrhœa and delirium, more especially the latter, are characteristic of starvation. Trouseau also lately pointed out the striking analogy existing between the more serious symptoms of typhoid fever and those of autophagy consequent upon protracted abstinence.—*Champonniére's Journal.*

Use of Triticum Repens.—An infusion of one ounce of the dried and cut root, in a pint of boiling water, has been employed by H. Thompson, in quantities varying from twelve ounces to a pint in twenty-four hours, with remarkably good effects against the following affections: Vesical irritability from inflammation of the prostatic and neck of the bladder; severe gonorrhœa, especially when the inflammation extends backward; the pain and spasm caused by calculus on aggravated stricture of the urethra; some obscure diseases of the bladder; prostatic enlargement in elderly patients, and renal calculus. Wherever micturition is very frequent or painful, depending on hypersensibility of any part of the urinary passages from acute or subacute inflammation, the symptoms are

mostly relieved and the urine becomes clearer. If improvement follows, it generally does soon after commencing the medicine; if none can be observed in four or five days, it is not worthy to be continued. It is important to gather the plant in the spring, shortly before the leaves appear, to dry the stem slowly without artificial heat, and to cut it into short lengths for use.—*Dublin Med. Press.*

Wine of Citrate of Iron and Quinia. By Sam. Campbell. —℞. Sulphate of quinine, 140 grains; citric acid, 120 grains; citrate of iron, 600 grains; diluted sulphuric acid, 3 fluid drams; liquid ammonia, distilled water, of each q. s.

Rub the quinia salt until perfectly miscible with four ounces of distilled water; then add the diluted acid; pour the whole into a decanting vessel and add the solution of ammonia, until it ceases to form a precipitate, being careful not to have the alkaline solution in too great an excess. The precipitate is to be carefully washed with distilled water until the washings cease to evince any further evidence of alkaline reaction upon litmus-paper previously reddened with an acid. The hydrated quinia is then incorporated with the citric acid and citrate of iron, previously dissolved in three ounces of boiling distilled water. When completely dissolved, add sufficient distilled water to make the whole measure thirteen fluid ounces. Eight fluid drams of this solution contains eight grains of the double salt. By mixing two fluid drams with six of pure sherry wine, a solution is obtained containing in each teaspoonful two grains of the salt.—*Amer. Jour. of Pharmacy.*

Discoveries of fossil human remains.—It is said that M. Malaise, a Belgian palæontologist, has discovered in the cave at Engihoul, near Liege, portions of two lower jawbones and three pieces of skulls, undoubtedly human. In each jawbone the last three molars remain, all but two of which are much worn, and one is decayed. The pieces of the skull are identified as fragments of the occipital and parietal bones; one of the latter is remarkably thick (eight millimetres). In the colour, degree of decomposition. and position, the human bones were indistinguishable from the

other animal remains which were found under the stalagmite. This stalagmite is less than two inches thick, and is overlaid by a bed of porous and pebbly silt, varying in thickness from two to three feet. Detailed facts relating to this discovery will be given in Sir Charles Lyell's forthcoming work on the Antiquity of Man. This is not the first instance of the discovery of human remains in the cave at Engihoul, and it would be most interesting to compare the remains there discovered with those which have been derived from the neighboring cave of Engis.—*Med. Times and Gaz.*, Oct. 11, 1862.

Mortality from Coal Mine Accidents in Great Britain.—The deaths from accidents in coal mines in 1857 were 1122; in 1858, 930; in 1859, 914; in 1860, 1109; and in 1861, 943; being an average for the five years of just over 1000.

Railway Accidents in Great Britain.—During the year 1861, 284 persons were killed and 883 injured by accidents on railways in the United Kingdom. Of this number, 216 were killed and 836 injured in England and Wales; 39 were killed and the same number injured in Scotland; and 29 were killed and 8 injured in Ireland. Forty-six passengers were killed and 781 injured from causes beyond their own control.—*Lancet*, Sept. 27th, 1862.

Munificent Donation to the United States Sanitary Commission.—The city of San Francisco, California, has sent to the United States Sanitary Commission one hundred thousand dollars. This munificent donation is most opportune, and will enable the commission to largely increase the comforts of the sick and wounded of our heroic army.